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ST. THOMAS'S HOSPITAL.

CLINICAL LECTURE

BY

JOHN ELLIOTSON, M.D., F.R.S.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE

IN THE UNIVERSITY OF LONDON,

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CASE OF ANASARCA AND ASCITES.

Singular general Disposition to Hypertrophy in the Large Viscera.

The parts before me, Gentlemen, were all taken from a woman who died on the 23rd of this month in Mary's Ward. She was 35 years of age, and had been admitted on the 7th of January with universal dropsy, at least with anasarca and likewise ascites. She stated that she had been ill only two weeks. I suppose she only knew herself to have been ill two weeks, but it is quite apparent that she had been ill much longer than that.

Symptoms.—The belly was very much distended. There was decided fluctuation in it, and consequently no doubt existed of the ascites. With regard to the anasarca, she said that her face swelled at the very first, that one of her first symptoms was the swelling of the face; and it appeared that the anasarca and the ascites began at the same time. It seemed from all this, that she was only labouring under inflammatory dropsy. In that form of dropsy the face almost always swells as soon as any other part; I mean to say when the dropsy is an acute disease. She said she had been ill only a fortnight altogether, and when dropsy is an acute disease, it arises from cold or wet, as most inflammations do, and best yields to bleeding. But the abdomen was exceedingly tender on pressure, so that there was a decidedly inflammatory state of the peritoneum. It is not at all uncommon for ascites to be an inflammatory disease, like any other dropsy, and you may always infer it when with fluctuation of the belly there is extreme pain on pressure. She said that she made but little urine. In inflammatory anasarca, it is common for patients to make as much urine as in health, and sometimes more. On examining the urine, it was found to be albumenous—to contain serum. She had also nausea and vomiting, which, in all probability, arose from the peritoneal coat of the stomach being inflamed. When peritonitis exists, if the peritonitis happen to affect the outer part of the stomach—the peritoneal coat of that organ, then you are almost sure to have extreme vomiting, and, of course, nausea. The bowels, she said, were open; there appeared to be no affection of the inner coat of the alimentary canal, for the bowels were neither relaxed nor confined.

Treatment.—I ordered her to be bled to the extent of twelve or sixteen ounces, accordingly as she might bear it, and the blood proved to be buffy. Four grains of calomel were given her twice a day. I had no fear of increasing the nausea and vomiting by the calomel, because there was clearly peritonitis, as evinced by the extreme tenderness of the whole abdomen; and the calomel, if it acted strongly on the inner surface of the alimentary canal, would in all probability relieve the irritation on the outer surface, for it is by no means uncommon for the inner and outer surfaces of the alimentary canal to be in opposite states. I have seen, on the cessation of diarrhœa, ascites take place; and the best way to get rid of the latter is, to effect a good drain from the inner surface. On the following day 20 leeches were applied to the abdomen, and the effect of all this was, that the nausea and vomiting ceased, and the quantity of urine was increased. She was bled again on the 13th to ten ounces, and as her mouth was tender, I ceased giving her mercury, but exhibited half an ounce of tartrate of potash every day. Some little inflammation of the bronchiæ then came on. There was quick respiration, with cough, and sonorous rattle, and for that she had a blister applied on the chest, the pulse not justifying fur-

ther bleeding. She had been bled once to twelve ounces, once to ten ounces, had had twenty leeches on the belly, and as the half ounce of tartrate of potash did not purge her much, the quantity was increased to six drachms.

Now the anasarca all went away, excepting a little swelling in the ancles. The ascites likewise diminished considerably, so that the liver could be felt, and now it was found to be enlarg d and greatly indurated. It could be felt in the right hypochondrium particularly, as low as the umbilical region. The edge was well defined, and the whole of that organ was excessively hard. It was clear now, that there had been an active acute attack upon a chronic disease,—that the woman must have been some time labouring under enlargement and induration of the liver,—hepatic disease, and from some cause or other, an active inflammatory state of the peritoneum had been set up. You will find this a very common thing in chronic disease, particularly in chronic affections of the heart, and other contents of the chest; but it also takes place in chronic affections of the abdomen. In this case it was evident that a sudden acute attack supervened on a chronic affection. It is necessary to be aware of the possibility of this circumstance, or you might think that it was only the chronic disease getting worse; but if you know when there is organic disease of the heart, that the patient is liable to an attack of active inflammation in the chest, then, when such an occurrence takes place, you will have ascertained the point, and you may be able to remedy it. If you were not aware of this, you might neglect to treat it as inflammation, supposing that it was merely an organic disease getting worse. For instance, you might take it to be only still chronic bronchitis, or phthisis, and then no more could be done, whereas if you be aware that active inflammatory attacks easily seize parts, or the neighbourhood of parts, when there is organic disease, you will be prepared to remedy that in the usual way, and the patient will probably be brought back to the state in which he was before the acute attack came on. The anasarca in this case was got the better of, and the ascites diminished very much.

Now what remained to be done was, to endeavour to soften, and cause absorption of, the enlarged liver. A liver as large as this, one can hardly expect to be reduced, at least not for a great length of time; and if the patient's strength be not sufficient for life to continue for some months, of course there can be no time to effect it. I began to treat this woman with the hydriodate of potash, about seven grains, plentifully diluted, three times a day,—seven grains and a half. She took a drachm of the solution, which contained a drachm of hydriodate to one ounce of water; therefore the eighth part of a drachm. She also rubbed in the ointment of the hydriodate of potash, which consists of a drachm or two drachms, just accordingly as the skin will bear it or not, to one ounce of grease. This was begun as soon as I found the symptoms were sufficiently diminished to make it unnecessary to purge her and give her simple diuretics longer, and as soon as I found the liver was in a state of induration. I began this treatment on the 31st of January, but her strength gradually diminished. She was pale and weak when she came in, and she sank slowly, and died on the 23rd of the month, so that there were only 23 days to take this remedy; and indeed she did not take it for the last two days, on account of the pain in the abdomen returning. The peritoneum was very much diseased, and liable to attacks of inflammation from time to time. That was what had occurred when she came in, and now it again took place. The abdomen became tender and she sank.

Post-mortem Examination.—On opening her there was found a sufficient cause for the exhaustion of her powers,—not in the enlargement of the liver merely, but of the kidneys, and perhaps of the spleen. I think I may say that the liver, the kidneys, and the spleen, were all in a state of hypertrophy. Enlargement of this description, and also induration, of course must have impaired the strength very much. Had there been merely an enlarged liver, her strength might have borne up for some time; but as there was so much morbid process going on in so many parts at once, her strength was gradually exhausted. When the pain was increased in the abdomen, the secretions in the peritoneum augmented again, so that we found several pints of water in her at her death. This was the result of the peritonitis which again occurred before her death. Her strength was so impaired, that no strong means could be adopted to recover them from this attack but a blister.

On opening the alimentary canal, all was found perfectly sound. I mention this, because she had been taking the hydriodate of potash. She never took any large quantity. The utmost that she took was three drachms of the solution, making rather more than a scruple, in the twenty-four hours. The disease was gradually decreasing, but signs of peritonitis came on, and her strength sank, so that there was no time to increase it further, and the medicine was altogether given in too small a quantity, and for too short a time, to do good; but when we consider what an extensive mass of hypertrophy there was, I very much doubt whether it would have done good

had her strength permitted us to persevere in its use. The inner surface of the stomach, however, and also of the intestines, was not only quite free from ulceration, but there were no marks of irritation, there was no redness, no great vascularity. On the other hand they were pale, as we often see them in dropsical people. No one could have discovered the difference between her stomach and intestines, and the same parts in many a healthy person.

The vomiting which took place before she died was of the same description as that which occurred when she came in, and arose from an inflammatory state of the peritoneum. The peritoneum, as you see in this specimen, had been in a severe old inflammatory state, there being lymph effused on the surface of the liver. You see that the peritoneal coat of the organ had become quite white from the effusion of lymph, and you see that there are long strings, bands, and adhesions, on the surface. You observe these marks on the concave, as well as on the convex, surface. The liver altogether is of a very large size, but not larger than you might have expected, because it could be accurately felt during life. I do not see, generally speaking, any disease of the organs, except an increased growth and hardness. There is no formation of tubercles, no new deposition of any sort, but the substance of them has become very hard. It is hardly worth while for you to dirty your fingers to feel it, but you perceive that it is hard throughout, from the difficulty with which I make the least indentation upon it. It is so exceedingly hard, that it is almost impossible to make an indentation. On making this free section, you see that the peritoneal coat has become thickened, that it is much thicker than it should be.

The liver itself is very red and firm, but not at all unnatural in its composition. It is a simple case of hypertrophy, just as you observe in instances of the heart. When the heart is hypertrophied, for the most part you see no new deposit, no alteration of structure, except that it becomes larger and thicker than it should be, and, generally speaking, firmer also than it should be. Or, in the case of the heart if the cavity be dilated, there is frequently great additional substance without any increase of the thickness of its parietes, because, being dilated, it would grow thinner if there were no increased deposition. This is simply a case of *overgrown* liver. It is the red part that is chiefly hypertrophied, and you perceive it is exceedingly red, except in one or two parts near the surface, where it is rather paler than it ought to be, but this part is of very small extent.

This is very different from the liver of gin-drinkers. A gin-drinker's liver is generally very hard, but it contains minute granules which are sometimes called tubercles, although the term tubercle is now restricted to a scrofulous tubercle, these minute granules being of a yellow colour, and they are either a new deposit, or hypertrophy of the secreting portion of the liver,—of the biliary portion rather; and the liver, too, is frequently hard, and smaller than it should be,—and not, as I have just said, of its ordinary structure. The case before us, however, I have no hesitation in saying, did not arise from dram-drinking. It has no appearance of that. The liver is frequently altered in this way in women. Sometimes it is very pale, greasy, and rather soft. In females, frequently, without a cause which we are able to discover, the liver will grow to a large size. I have seen it reach into the pelvis in persons who never drank drams, and appeared exempt from the causes of hepatic disease,—who were living quietly in the country, and pursuing the best possible habits. In men disease of the liver far more frequently arises from drinking than not, but in women I see it, far more frequently than not, without a cause that I am able to discover, and frequently too it will arise in children; often in female children. I hardly know whether more girls are affected than boys, but it will often grow in women without any apparent cause; whereas in men, in eight cases out of ten, it arises from drinking.

The spleen is likewise very large; but if we had only seen the spleen enlarged, and no other organ, we should have passed it over, and merely said there was a very large spleen; but when we consider how large the kidney is, we are justified in considering all these organs to be hypertrostill very firm, notwithstanding it has been phied. This great increase in size but not disease in structure exists then. The spleen is taken out of the body, and a section has been made into it some days. The peritoneal coat of it is diseased you see. Here it is exceedingly dense, but the structure is natural; that is to say, there is no new deposit or transformation, and altogether it is very large. We should say this was a very large spleen. When we see the quantity of inflammation of the peritoneal coat outside, the inflammation being evidently the result of a chronic disease, and there being other organs hypertrophied, I have no doubt that originally the spleen was of the common size, and that it has grown to its present magnitude by disease. You perceive that there is a loose spleen hanging to it, and I believe there were one or two others, so that there was multiplication as well as magnification. Then, if you turn to the kidneys, you will see that they are quite

healthy, or nearly so, in appearance, but very large in size, and firm. This, which I now show you, is a very large kidney. You seldom see a kidney of this length, and the other, though not so long, is nevertheless a large kidney, and both are exceedingly hard, even now, though they have been laid open and exposed to the air for three days. Here is the cortical part paler in some places than it should be, but altogether I do not know that they are otherwise unhealthy kidneys.

Now here is the heart, and this also may be in a state of hypertrophy. The walls of the left ventricle are thicker than you generally see them, you observe that the cavity is very small, but you observe that the outer part of the heart is exceedingly small. It is a very little heart. Under the circumstances, I should not feel justified in saying that the left ventricle was in a state of hypertrophy, but had the heart been of its usual size externally, I should have said that it was hypertrophied. When you see the heart smaller than it should be outside, I think it likely that the thickness of the walls is merely the result of excessive contraction of the ventricle. The walls being muscular, if they are contracted they will become thick, just as is the case with other muscles; and when you see that the heart is so small on the outside, it would appear that a great contraction of the walls of the ventricle has taken place, reduced its external size, and produced a great thickness within. Upon the whole I think the increased thickness is nothing more than commensurate with the diminished bulk of the organ externally. It may be hypertrophied, but I do not know that it is, and she had no symptom of hypertrophy during life. You will find my view of this point in the work I have published on the diseases of the heart. There was also some disease of the ovary, which I have not yet examined. The uterus appears healthy, and of the usual size. The right ovary is in a state of dropsy. You observe a cyst which appears to be the right ovary. Here is the fallopian tube. Here is the round ligament, and you see the broad ligament. The fallopian tube has grown to the ovary. It has no open extremity. Even if she had not had dropsy of the ovary, the tube would have been of no use. This appearance is said to be very often seen in prostitutes. Here is the inner surface quite smooth. Here is another little encysted tumour which is sprouting forth. The tube would in time have filled and distended with its own secretion. The fimbriated extremity of the fallopian tube is, you perceive, quite adherent to the ovary, and the ovary itself is nothing more than a sac. Here is a third cyst. The ovary has become enlarged, the parietes thickened, and the cavity filled with fluid. The ovary at large appears wasted. You often see this circumstance in the kidney. If the pelvis becomes extremely distended with fluid, the substance of the kidney will at last waste away. The fallopian tube of the left side is also adherent in the same way as the other. You may perceive the tube by its tortuous course. The sides are completely bound down, which has doubtless arisen from inflammation going on to a great extent in that part of the peritoneum, as well as in the upper part over the liver and spleen. This woman would not have brought forth even on this side. She multiplied only in the spleen (*a laugh*), where you perceive there is still one little one. I believe there were two more. The coats of this ovary are very much thickened, but you see a cavity, and here are two vesicles.

This is certainly a very singular case, on account of displaying such a general disposition to hypertrophy in several viscera, occurring as it does in the liver, the spleen, and the kidneys. The case is rendered the more singular, by there being no other disease of structure. There are some diseases in which there is a disposition to hypertrophy of many parts. For instance, in rachitis, the ends of all the bones are disposed to enlarge; even the bones of the head, and in the disease called *cretinism*, there is also a disposition to hypertrophy of the bones of the head. Frequently, too, you observe in this complaint symptoms of hypertrophy of the heart, tongue, &c. and at the same time of the thyroid gland. There are certain states of the system in which there is a great disposition to hypertrophy, but I do not recollect a similar instance to the one before me, of great hypertrophy and induration of several abdominal viscera, without any other change of structure, either transformation or new formation.

Respecting the hypertrophy, I have no doubt that it is of an inflammatory nature. The parts are all firmer than they should be, and they are very red; at least as red as they should be, and there are marks of inflammation on their external surfaces. There is no doubt that hypertrophy of the heart is, for the most part, an inflammatory disease. If you consider what extreme nourishment is, you must see that it must be inflammatory. If a part be nourished more than it should be, there must be great activity of the vessels, more activity of the circulation there than in health, and though it may not be really inflammation, yet it is allied to inflammation; it is an inflammatory state. You may dispute about the word inflammation, but this state certainly gives one the idea of an inflammatory state. I may men-

tion, respecting hypertrophy of the heart, which is the more frequent occurrence, that it is found under the microscope that the fibres of the heart when hypertrophied are redder than they should be, if steeped in water, while a portion of another heart is steeped in other water, the hypertrophied heart reddens the water more than an equal slice from the healthy organ, showing that there is more blood in it, and when it is taken out of the water, still it is the redder of the two; after it has impregnated the water, and made it more red than the healthy heart, yet it is still the redder of the two. On putting it into boiling alcohol, it is found to contain less fatty substance; and besides this, in regard to hypertrophy of the heart, we generally find—more frequently than not, —that it begins as inflammation of the pericardium, and when it does not, it arises from over-exertion of the heart, and this perhaps through some obstruction to the course of the blood through it so that it acts more violently.

When hypertrophy has existed for some time, together with induration, still, at last, the part will become soft. There is no doubt about it, and no doubt sometimes you find the part which is hypertrophied not redder than it should be, but paler. As a general rule, however, when a part is overgrown, if there be no new deposition, if it have not overgrown from new deposition, and there be no change of structure, exactly as is the case here, and which is true hypertrophy, its natural structure remains, you find it only firmer and harder than it should be. But these two circumstances taken together, make it probable that the affection is of an inflammatory nature, and more particularly when you consider that in the outer surface of the heart, for example, and of the liver, the investing membrane generally shows decided marks of inflammation.

ST. GEORGE'S HOSPITAL.

CLINICAL LECTURE

DELIVERED BY

DR. SEYMOUR,

March 27, 1832.

SCARLATINA.

I HAVE now, Gentlemen, a patient under my care with this complaint, and I shall therefore take the opportunity of making a few remarks to you upon the disease. Scarlatina, you know, is an epidemic and contagious complaint,—contagious so far that if two or three persons who have it are confined in the same room, and that room be not well aired or ventilated, a stranger coming into it would be very likely to catch the complaint; but in this hospital the wards are so well ventilated that we are not afraid to place a patient afflicted with scarlatina amongst the other persons in the ward, and we seldom or ever find any ill results occurring from it. The efflorescent or red appearance of the skin is not absolutely necessary to establish the fact of the disease. About the end of the second or beginning of the third day, the symptoms generally increase in violence, and the affection of the throat and fauces is often very severe; if you find the fauces presenting a darkened livid colour without any inflammation being present, you may regard it as a very dangerous symptom,—if the eruption appears in patches, is of a dark colour, and goes off in a few hours, this is a bad case of cynanche maligna. I would refer you to Dr. Fothergill's excellent work on this disease, or to a better author still, Dr. Willan. Such bad cases as those described by Dr. Willan are, however, rare; the case of which I am now speaking is comparatively moderate in its symptoms. Scarlatina has been epidemic in London for the last three months; after the third day you in general have desquamation of the cuticle; the danger is then all over. In young children you sometimes have effusion into the ventricles of the brain, and this I found to be very much the case in my private practice among children about three years ago. You must watch the symptoms of the disease in children very narrowly; for very often, when to all appearance the hour of danger is gone by, and the symptoms are assuming a favourable aspect, you will find effusion in the ventricles of the brain. Where the symptoms are mild you will generally find effusion into the ventricles, and *vice versa*. Effusion is very rare in adults; I once had a case, and the patient recovered her senses as she would have done if she had had an attack of mania; she was first aroused by the sound of the clock, and when she spoke a sentence she hummed over it and left out all the small words. In children you very often have effusion into the cellular membrane, and this you will find to be a very intractable form of the disease; I never saw a case of death from this, but I have seen some very bad cases of it. The occurrence of anasarca in scarlatina, is always to be looked to and guarded against; it is more commonly found as a symptom of the disease in children than in adults. In scarlatina the temperature of the skin is higher than in any other complaint, and in ordinary cases of the disease where you find the

skin steadily hotter than natural, we will say at 104° or 106°, and where there is no sensation of cold, the best plan you can follow is to pop the patient at once into a tub of cold water, or put him into a shower-bath, and this you may do twice a day. Dr. Curry, in the Medical Reports, speaks very strongly in favour of the cold-bath in this complaint, and the late Dr. Gregory, of Edinburgh, speaks of the case of his own child who was seized with scarlatina, when the worthy doctor immediately popped the child into a cistern of cold water. The whole account is well worth your perusal, as well for the terse, quaint, yet energetic style in which the doctor writes, as for the professional information which it will give you. The treatment with cold affusion and keeping the bowels open is in general all that is required in the ordinary cases of this disease, and when the patient has recovered give him one or two brisk aperients.

If the heat of the skin is not very great you will in general find the affection of the throat worse, and if the fauces are very much inflamed or ulcerated, you must give gargles, but not stimulating ones, as they will only aggravate, and not remove, the irritability. Emollient gargles should be used, such as are soft and warm to the fauces,—such as warm water, the decoctum hordie compositum, or inhaling the vapour of hot water and vinegar, or holding hot bread and milk in the mouth; each or any of these you will find of use, and with this the bowels should of course be kept open. If you have an opportunity of seeing the case in its early stage, when the throat is inflamed, you will find emetics of great benefit in altering and cutting short the malignant type of the disease, and they also tend greatly to promote an increased action of the absorbents. If the inflammatory symptoms are high and the pulse is full, leeches may be applied to the throat, and hot poultices afterwards, and the leech-bites may bleed into these. You will say perhaps that it is very difficult to keep the bowels open where the patient is not able to swallow, but if you put calomelanos gr. iij on the tongue twice a day, it will surely find its way down into the stomach and keep the bowels open. If the patient sinks, you must give him wine and other stimulants to rouse him. If you have a very bad case, you will find your faith in the antiphlogistic plan of treatment very much shaken. I once saw a very bad case at Lambeth, and I ordered *sulphatis quininæ*, gr. iij, *tertiis horis*, and wine; this plan of treatment was persevered in steadily for three days, and the patient eventually got well. In some very bad cases if you add a little ammonia to the gargle, it will operate as an emetic, without doing the patient any injury. In a paper which I once read, written I believe by a surgeon at Gainsborough, ammonia it appears was given in scruple doses of the carbonate every two or three hours. The patients all recovered, and that very soon too. The ammonia can certainly do no harm, but it is strange how it can be swallowed in such an inflamed and irritated state of the fauces.

HEPATISATION OF THE LUNGS.

This, Gentlemen, is in general the consequence of long-continued inflammation of the substance of the lungs,—when lymph is poured out into the interstitial structure—thickening and altering the structure of the lungs, which effect is termed hepatisation. The consequence of all this disorganisation of parts is that the blood does not circulate freely through the lungs; it is therefore thrown back upon the heart, threatening the patient with suffocation. The results of inflammation are different according to the different structures which it attacks. Pus may be formed in the cellular membrane. Lymph may be poured out in the liver or lungs, but pus may also be effused in the lungs, and when you cut through them puriform matter escapes; in some cases you find abscesses formed in the structure of the lungs, but these, as the result of inflammation, are comparatively rare. In this case of hepatisation of the lungs, we have the second stage of inflammatory action present, and in such a case as this the main object of your treatment should be to draw off the current of circulating fluid in some measure, and to promote free expectoration. Here in this case I ordered venesection, and after that mercury to promote absorption; he was blistered and bled a second time, the blood still showing the buffy inflammatory coat; but the mercury had not then begun to affect the mouth. When he had been in some measure lowered by this plan of treatment, I gave him the digitalis with the tincture of cantharides. The digitalis will act as an excellent diuretic, but only in low and languid states of the system. This case shows how much may be done in a bad case of inflammation of the lungs,—subduing it by other methods than those usually adopted or laid down in books.

INFLAMMATION OF THE LUNGS WITH HÆMOPTYSIS.

This is not a case in which the hæmoptysis arises from the bursting of a tubercle in the lungs, but I believe it possible that the man may have tubercles which, combined with the inflammation, may impede the circulation of blood through the lungs, causing hæmoptysis. Whenever you find a case in which blood is brought up by expectora-

tion, it ought immediately to awaken your attention, for this is frequently I assure you one of the very first symptoms of phthisis pulmonalis, although Dr. Cullen in his Nosology places it as one of the after symptoms of this disease. Well, in a case of this kind you examine the throat, and find the velum pendulum palati relaxed, and of a blueish red colour. Nothing satisfies patients sooner, than to tell them that their complaint proceeds from the throat; but you must look further than this, you must examine him closely, and if you find that his habit of body predisposes him to phthisis, or that any of his family have died of the disease, or that the hæmoptysis has burst out from the breaking of the cellular membrane of the lungs, owing to the violence of the circulation,—you may in your own mind set it down that he will have phthisis. Where you suspect tubercles, and in phthisis at all, be very careful how you give mercury, as it tends greatly to promote suppuration, and it increases bodily weakness and debility. In old persons you will frequently find after an attack of bronchitis, that there is a dull heavy pain diffused over the region of the chest; this is termed peripneumonia notha, or bastard peripneumony. Here you may give the liquor ammon. acet. with the vinum ipecacuanhæ, but you must not bleed; if the patient wastes, give him the balsam of Peru; if after the inflammation has gone off the secretion from the chest remains very great, he must inhale stimulants over the inflamed parts, and take the medicinal gums, of which the flores benzoes is one of the best I know.

In these clinical lectures, Gentlemen, I do not pretend to lay down to you any new rules of practice, but to acquaint you with those remedies, and those fully-approved plans of treatment, which will be most serviceable to you in your own private practice; for it is not he who attends most closely to the physiology and pathology of disease who succeeds the best; but he who has his remedies and his modes of treatment most ready for removing and alleviating those symptoms which he is called upon to relieve.

Breast-milk in Cholera.—It is a curious and interesting circumstance, that the secretion of milk is not necessarily checked in women in the course of the malignant cholera. The breasts may at the time of death be gorged. Mr. Frost mentioned to me a woman whose child was nursed a short time before her death; and Mr. John Fife met with a similar instance.—*Greenhow on Cholera*

LECTURES

ON

VETERINARY MEDICINE,

DELIVERED IN THE

UNIVERSITY OF LONDON,

BY

MR. YOUATT.

Lecture XXIV.

THE STRUCTURE OF THE LUNGS—THE PULMONARY CAPILLARY CIRCULATION—THE CHANGE EFFECTED IN THE BLOOD—CATARRH IN THE HORSE, OX, AND DOG—CHRONIC COUGH.

Of the intimate structure of the lungs I have little to say to you, and that little far from satisfactory. They are the seat of the pulmonary circulation. They convey through their comparatively little bulk the blood, and all the fluids beside scarcely become blood, or soon separated from it, which traverse the whole of the frame. Then it is evident that they must contain innumerable blood-vessels, or, rather, that they must, in addition to the ramifications of the air-tubes, consist of a mass or congeries of blood-vessels, or the balance or equilibrium of the circulation could not be preserved. They do so: the only account which I can give you of the structure of the lungs is, that they consist of countless ramifications of air-tubes and blood-vessels connected together by intervening cellular substance.

In order to examine them, however, as minutely as I can, I take the lungs of an ox; an animal in which they are considerably developed, and in which, from his quiet regular way of living, they are generally not much disorganised. If you compare these specimens, taken from the horse, the dog, and the ox, you will immediately perceive how much more perfectly their structure is exhibited in the last, and for the reason that I have stated.

The Divisions of the Lungs.—The lungs form two distinct bodies, the right somewhat larger than the left; and they are divided from each other by that duplicature of the pleuræ which has been already described—the mediastinum. Each lung has the same structure, properties, and uses. Each of them is subdivided; the right lung consists of five lobes, the left of two. These divisions are different in our different patients, but for what physiological reason I am unable to tell. In the horse the right lung consists of three lobes, and the left of two; in the dog the right has five lobes and the left two, and these lobes are far

more perfectly separated from each other than in the horse or the ox, for the separation commences even from the bronchial tubes. In the swine there are three lobes in the right side, or we may perhaps say that the right lung of the animal is divided into a great many lobes, for the smaller of the three is partially separated into numerous lobules, differing in number in different swine. The left lung consists of two lobes only, and the scissure between them is not very deep. The variations then have reference to the right lung—the left, in all our patients, has two divisions only. The principal intention of these divisions is probably to adapt the substance of the lungs to the form of the cavity in which they are placed, and to enable them more perfectly to occupy and fill the thorax.

The External Form of the Lungs.—The lungs are suspended from the spine by means of their blood-vessels, the bifurcation of the bronchiæ, and the mediastinum. Their figure is irregular, elongated, flattened, pyramidical; broad and concave posteriorly where they are in contact with the convex surface of the diaphragm, and narrower and approaching to a point anteriorly, where the cavity of the thorax narrows. We recognise in each three surfaces, the costal, the diaphragmatic, and the mediastinal. The convexity of the costal accommodates itself to the concavity of the ribs; the concavity of the diaphragmatic surface answers to the convexity of the diaphragm, and the mediastinum adopts itself to the irregular surface to which it is exposed. The rounded borders, superiorly, fill the longitudinal cavity or sulcus on each side of the dorsal vertebræ; the narrower borders inferiorly bend towards each other, and enclose the apex of the heart; the posterior borders follow the curvature of the diaphragm, and constitute the base of the lungs. The lungs are enveloped, as I have already described, by duplicatures of the pleuræ.

The Internal Structure.—We cut into one of the lobes, and we find it separated into numerous irregularly-formed compartments, to which anatomists have given the name of *lobules* or little lobes. They are separated from each other by cellular membrane. They are distinct from each other; and they are impervious, except through the medium of the air-tubes and blood-vessels which pass into and through them. We examine them more closely, and we can subdivide them, and almost without end; we have smaller lobuli, each surrounded by cellular membrane, each distinct from and having no communication with its fellows. The consideration of some of the diseases of the lungs, and particularly *broken wind*, will convince us of the independence of, or want of communication between, these lobuli. Broken wind is the unnatural running together of several of them.

The Minute Lobuli.—To these lobuli we have traced the ramifications of the bronchial tubes, but no one has demonstrated their entrance into them, nor the actual structure of these minute and ultimate subdivisions of the substance of the lungs. There has been many an ingenious theory about it, and we have been favoured with one or two very pretty diagrams of the bunch-of-grape-like terminations of the air-tubes. They probably have some such termination, but we have no ocular demonstration of it.

The Ramifications of the Blood-vessels.—An account of the blood-vessels of the lungs belongs to the circulatory system, but I may say at present that the pulmonary artery (artery we term it, for it proceeds from the heart, although it discharges the office of a vein by carrying black blood) arises from the right ventricle of the heart; it winds towards the root of the left lung, and there, at the bifurcation of the trachea, divides into two trunks, one of which penetrates each of the lungs. It very soon subdivides, following the divisions of the bronchiæ; it multiplies its ramifications as these tubes are multiplied; and it may be traced in company with them to the lobules which I have just described. Some successful injections have enabled us to trace them further, for the fluid has returned by the pulmonary veins. It has traversed these lobules, and has been conveyed back again towards the heart. We do, in point of fact, find other vessels of different structure returning blood from the lobules. We call them veins because they go to the heart, but they discharge the function of arteries by carrying red blood. They are minute at first; but they anastomose with and fall into each other until they assume a decided character, and constitute the branches and the trunk of the pulmonary veins which empty themselves into the left auricle of the heart.

The Alteration of the Blood in the Lungs.—Gentlemen, I here feel the inconvenience of the plan, which, for the accommodation of some of you who had attended my lectures on the sensorial and circulatory systems, I have in the present session adopted. Many of you have heard nothing of the mechanism of the circulation of the blood, nor the changes which are effected in that fluid, as it traverses certain vessels or certain parts, and therefore I am reluctantly compelled to confine myself to the simple statement, that the change produced as the blood circulates through the capillaries of the lungs, is precisely the reverse of that which takes place in the capillaries of the

other parts of the frame. In the general capillary system, the blood is changed from red to black, from arterial to venous, from vital to effete. In the capillary system of the lungs, the blood is changed from black to red; it is enabled again to furnish the materials for the various secretions; it conveys the principle of nutrition to every organ, and it also communicates to each organ that impulse or stimulus which enables it to discharge its function. This all-important change is effected through the medium of the atmospheric air, for we can trace it along the bronchiæ to these lobules, and we have no doubt that it enters them. The delicate membranes forming the parietes of the blood-vessels and the lining, or the wall of these lobuli, although impervious to the air in its compound form, suffer some of its principles to permeate them, and especially when urged by the strong power of affinity; and the oxygen of the atmosphere attracts and combines with a portion of the superabundant carbon of the blood, and the expired air is poisoned with carbonic acid gas; while some of the constituents of the blood attract another portion of the oxygen of the air, which combines with that fluid, and probably gives its distinguishing character and properties as arterial blood.

This, until we have inquired, as we should before have done, and in future will do, into the nature and properties of the blood, is all that I say of the changes produced by the process of respiration.

The Arterial and Venous Circulations.—Then, Gentlemen, it is evident that the circulation of arterial blood has its commencement in the capillaries of the lungs, and its termination in those of the frame generally. The venous blood begins to flow in the general capillaries, and terminates in the capillaries of the lungs. These systems are independent of each other; the fluid is essentially different; the vessels by which it is conveyed are different; but they communicate at these points, and, as I shall have occasion to show, the capillaries (too much neglected in our dissections and our inquiries) are by far the most important portions of the circulation. They are the origin and the termination of the two circulations, and in them the most important phenomena of life take place,—the change from arterial to venous, and from venous to arterial blood.

The fact of the whole of the Blood traversing the Limbs accounted for.—Does it appear singular that the lungs alone should counterbalance the circulation of the whole body? Let it be remembered, that while the lungs consist of a congeries of blood-vessels, or are made up of them, this fluid is distributed very sparingly to many parts of the frame. The cellular membrane, and the ligaments and tendons, have not much of it, and the bones have still less; while the integument has scarcely any. This will materially lessen the comparative quantity. In the frame there are various circumstances of retardation; the vessels take a tortuous course—they run in opposite directions—they wander through many a gland, and the blood is purposely delayed for the accomplishment of many an important function; but the vessels of the lungs take a direct course; there is nothing to divert or to retard the current, so that a considerable portion of the blood which they contain enters the heart at each dilatation of the auricle, while a far smaller proportion of the blood of the frame generally is then received. That which is deficient in bulk is fully supplied by the directness and shortness of the course, and the rapidity of the current; beside, the lungs are close to the heart; all its power is felt by them, while the blood has begun to loiter in its course before it reaches many of the distant portions of the frame.

Transmitting the whole of the Blood, the Lungs are easily inflamed and disorganised.—If, however, it be true that the pulmonary circulation counterbalances that of the whole frame beside, and even of that portion of itself which belongs to the general capillary system, we shall be enabled to account for the prevalence of disease in this organ above any other, and especially in that shamefully-abused animal the horse. When we consider the extra labour of these vessels, which is so often required, to supply the increased consumption of arterialised blood in rapid progression; the irritation to which the membrane of the bronchial tubes is in some measure exposed, notwithstanding the guard of the larynx and the Schneiderian membrane, from contact for so many hours, with the irritating and empoisoned air of a filthy stable; and more especially when we regard all the sympathies which such an organ must have with every other, and particularly the sympathy which daily experience tells us it has with the functions of the skin, and the discharge of the perspiration, sensible and insensible, can it be wondered at that it is so subject to inflammation, so difficult to subdue, and often so fatal? Inflammation is increased action of the capillary vessels; this organ is made up of them, and they become engorged, and the substance of the lung increases under inflammation with a rapidity unequalled in any other part. The walls of these vessels are exceedingly delicate; they are of a gossamer structure, in order to admit of the escape of the carbon, and the imbibition of the oxygen, and when they are distended with blood, it is scarcely conceivable how soon it begins to filter through them. We hear it in the very act of filtering,

if we apply our ears to the side of the animal; and it penetrates into the interstices of the cellular tissue, and the whole substance is gorged and infiltrated. These considerations sufficiently explain the frequency and obstinacy and fatal termination of thoracic inflammation in the horse, and prepare us for that which, leaving for a while our anatomical detail, and our necessarily imperfect physiological inquiries, next presents itself to notice, namely, the diseases of these portions of the respiratory apparatus.

CATARRH IN THE HORSE.

I have already directed your attention to inflammation of the Schneiderian membrane, or that which lines the nasal cavity. Coryza is attended by a slight defluxion from the nose, now and then a yet slighter weeping, and some increased labour of breathing, from the uneasiness which the animal experiences from the passage of the air over the naturally sensitive, and now more than usually irritable surface, and from the air-passage being diminished by the thickening of the membrane; but when this is a simply local inflammation, attended by no loss of appetite, or increased animal temperature, it may speedily pass over.

Symptoms of Catarrh.—In many cases, however, the inflammation of a membrane naturally so sensitive, and rendered so morbidly irritable by our absurd treatment, rapidly spreads, and involves the fauces, the lymphatic, and some of the salivary glands, the lymphatic glands of the lower jaw, and the throat, and the parotid gland, and also the membrane of the larynx. We have then increased discharge from the nose, greater redness of the pituitary membrane, more defluxion from the eyes, and loss of appetite from a degree of fever associating itself with the local affection, or apparent loss of appetite from pain in swallowing, and if the animal feels this he will never eat. Cough now appears more or less frequent or painful, referable generally to the upper respiratory passages; but no great degree of fever or acceleration of the pulse, or heaving of the flanks; there is, however, more or less defluxion from the eyes.

Causes of Catarrh.—Catarrh may arise from a thousand causes. Membranes subjected to so many sources of irritation soon become irritable. Exposure to cold or rain, change of stable, change of weather, neglect of grooming, change of the slightest portion of clothing,—many circumstances apparently trifling, and which they who are unaccustomed to horses would think could not possibly produce injurious effect, are the causes of catarrh. When there is anything about the animal that favours this general febrile action or local determination, catarrh can scarcely be avoided. In the spring of the year, and while moulting, almost every young horse has a cough, and in the dealers' stables, where the process of making up the horses for sale is carrying on, there is scarcely one of them that does not cough.

Treatment.—In the majority of cases, a few warm mashes, warm clothing, and a *warm stable*, a fever-ball or two, with a drachm of aloes in each, and a little antimony at night (in almost any of its combinations, but of which the antimonial powder is probably the best), will usually set all right. Indeed all would soon be right without any of our medicine, and much more speedily and perfectly, than if we had foolishly given those cordials of which grooms and farriers are so fond.

Caution.—We are now approaching, Gentlemen, a class of diseases in the treatment of which a great deal of tact is required. You would do very wrong if you treated every case of common cold in this cavalier way; and you would be equally reprehensible, and get into sad disrepute with your employers, if you made a serious business of these every-day complaints. Your duty to your employer will lead you to adopt every proper measure to prevent the malady from increasing, and to restore health as speedily and with as little expense as you can; and, on the other hand, the duty which you owe to yourselves, the preservation of your professional reputation, will urge you, while you do not make an unnecessary or palpable job of the case, yet never to hazard the occurrence of a worse disease by apparent or real negligence. Nineteen horses out of twenty with common catarrh will do well, but in the twentieth case a neglected cough may be the precursor of bronchitis, pneumonia, and death. Then, although you may not do much, you will always ponder the case well. If there is no acceleration of pulse, no heat of mouth, or redness of nasal membranes, or soreness of throat, or loss of appetite, you may tread the ground lightly, especially if the owner is a niggard. But you must make yourself sure of all this; you must remember with what kind of animal you have to do, and to what a sad degree he may be predisposed to serious thoracic affection. You must recollect, and experience will soon convince you of this, how insidiously these chest complaints creep on,—how frequently inflammation is established before you are aware of its existence. If there is the least fever, bleed. The surgeon would never be justified who suffered a common cold attended with heat of mouth, or indisposition to food, to pass without the abstraction of blood. You need not make your patient quite a sick horse, but you should be always on your guard.

Caution against Physic.—Never give a physic-ball in catarrh. Let no wish of the master or the groom induce you to do it. You know not what sympathy may exist between the portion of membrane already affected, and the mucous membrane generally; and I shall have again and again to prove to you that in severe thoracic affection, or in that which may soon become so, a dose of physic would be a dose of poison. There are few more fatal, and I am sorry to say more frequent instances of mal-practice than this. Thousands of horses are lost by physicking under catarrh. Some of my young friends saw with me a case a few days ago in which a horse was murdered by the administration of a dose of physic under what appeared to be common cold.

Treatment resumed.—If, however, careful investigation assures us that there is no affection of the lungs,—that the disease has not proceeded beyond the fauces, we may with advantage unite *small* doses of aloes to our nitre, emetic tartar, and digitalis. To evacuate the intestinal canal, and to reduce the fæcal discharge to a pultaceous form, must ever be beneficial, if we so adjust our doses as to stop there; but if we proceed one step further dangers environ us.

Sore-Throat.—If catarrh is accompanied by sore throat; if the parotids should enlarge and become tender (there are no tonsils, *amygdalæ*, in the horse), or if the submaxillary glands should be inflamed and tender, and the horse should quid his food and gulp his water, this will be an additional reason for bleeding, and also for warm clothing, and a comfortable stable. I do not mean a hot stable, in which the foul air is breathed over and over again, but a temperature somewhat above that of the external air, and where that determination to the skin and increased action of the exhalent vessels of the integument may take place, which in these cases are so desirable.

Liniments.—Some stmulating liniment may be applied over the inflamed gland, consisting of the turpentine tincture of cantharides diluted with five times its quantity of spermaceti or neat's-foot oil; strong enough to produce considerable irritation on the skin, but not to blister, or to destroy the hair. An embrocation sufficiently powerful, and yet that never destroys the hair, consists of equal parts of hartshorn, oil of turpentine, and camphorated spirit, with a sixth part of laudanum.

CATARRH OR HOOSE IN CATTLE.

Cattle, and particularly cows, are very subject to catarrh. They are so when most judiciously treated, and especially those that are highly bred, and bred for several generations *in and in*. This produces a delicacy of frame and constitution, which renders them unable to struggle with any kind of hardship. When cattle are crowded together they are seldom without hoose. I have seen the vapour produced by their perspiration steaming from them hour after hour; the cow-house has been heated many a degree above the surrounding air; but this has been neglected and scarcely observed, because the fæces of this animal have no offensive smell, and the urine is comparatively devoid of ammonia. The cows are then let out for an hour or two to grass, or to water, when they inevitably take cold.

The negligence of the owner.—I know not any disease by which cattle are so seriously injured, or which is eventually so fatal to them, as hoose or cough, yet neither the herdsman nor the owner pays any attention to it. The animal may cough from week to week, and no one takes notice of it, until the quantity of milk is seriously decreasing or the cow rapidly losing flesh, and then medical treatment will generally be unavailing. The disease has reached the chest, the lungs are seriously affected, and the foundation is laid for confirmed hoose or phthisis.

Hoose often caught at straw-yard.—Many a sad and eventually fatal cold is taken at straw-yard, and particularly by young cattle. The food is scanty—not sufficient to afford proper nourishment, or to keep up the natural warmth, and the more forward drive the others about, and scarcely permit them to obtain a fourth part of their share. The depressing effects of cold and wet, and hunger and fear, so debilitate these poor beasts, that the slightest catarrh fastens upon them, and produces serious and often irremediable pulmonary affection.

Treatment.—You would bleed here if there is the slightest degree of fever. You would remember the inflammatory character which almost every complaint speedily assumes in these animals, and the uniform violence of the fever if it is once suffered to get head. The horse is rarely subject to any disease, which in the speed with which it runs its course, and its frequent fatality, bears the slightest resemblance to the inflammatory fever of cattle.

Having bled, you would certainly physic, for you have an aperient which, although comparatively inert in the horse, is certain and mild and safe in its operation on cattle, I mean the Epsom salts. The medium dose is a pound. Fever medicine would follow the action of the purgative, composed of the same drugs, but administered in half the quantity; and to this should be added warmth, warm mashes, warm drinks, warm gruels, and a warm but well-ventilated cow-house.

CATARRH IN THE DOG.

Dogs and especially those that are petted, are subject to frequent cough and catarrh. The disease assumes according to circumstances two very different forms, requiring a material difference of treatment. Sometimes there is a husky cough, not to so great a degree as in distemper, but followed by the same apparent effort to get something from the throat, or the same attempt to vomit, and the ejection of a small quantity of mucus, either simply frothy or discoloured with bile. This proceeds from obstruction of some of the air passages, and oftenest of the superior ones. An emetic will clear the fauces, and the violent pressure on the thoracic viscera will force out a portion of the spume which clogs the bronchial tubes. Cough of this kind, and attended, as is generally the case, by little fever, requires nothing more for its cure than the exhibition of a few mild emetics; and the emetic for the dog, surest and safest in its operation, consists of equal portions of calomel and emetic tartar, and given in doses varying from one grain to one grain and a half of each.

The harsh hollow cough is attended by more inflammatory action. Emetics are useless here. The depleting system must be pursued. This cough, so loud and so harsh, will yield only to the lancet and purgatives, assisted by sedative medicines composed of nitre, antimonial powder, and digitalis. An opiate (the syrup of white poppies) given at night will often be useful.

CHRONIC COUGH.

Cough in all our patients becomes occasionally chronic. This is the occasional sequela of simple catarrh, but much oftener of an acute disease of some portion of the respiratory apparatus; it is especially the consequence of pneumonia and bronchitis. It continues weeks and months and years, or even during the life of the animal; and it is aggravated by every change of weather, and exposure to cold. It is sometimes connected with other diseases, as worms, but oftener it is found when the animal is otherwise in perfect health and full condition, and the breathing undisturbed. It is heard when he first begins to stir in the morning—when he drinks, or when he is first taken from the stable into the cold air. Weeks and months pass, and it does not seem to be followed by any bad consequence; but it indicates irritability somewhere—a predisposition to take on inflammatory action,—and, if the animal is closely watched, the cough will be evidently aggravated, and even serious inflammation of some portion of the respiratory tubes will be produced by causes which would not affect another horse. It is often a nuisance to the rider, and it is extremely unpleasant in the stable.

Treatment.—How shall we get rid of it? Ay, there is the rub. It is unaffected by the means which we should adopt in common catarrh; it is one of those chronic irritations over which depletion has no power.

We must endeavour to get at the history of the case—we must find out the seat of the previous disease—we must particularly observe whether the wind is perfectly sound—whether the cough is aggravated by sudden exertion—whether pain is felt when we press on any part of the trachea or larynx.

If we can fix upon the part there may be some hope. An external stimulus, applied in good earnest, may act as a counter-irritant. If the seat of the complaint is obscure, we have little to guide our treatment, and the result will probably be unsatisfactory. We may however attend to the diet. We may feed well, but not too well. These chronic local irritations will sometimes cease when we can produce a healthy state of the constitution generally; but debility may in different ways, yet with almost equal power, increase the complaint. Carrots, a mild and nutritious food, and particularly salutary in affections of the respiratory organs, may be tried, or a six weeks' run at grass in the spring, a better, far better alterative than our whole Pharmacopœia affords.

If these fail, medicine will be generally thrown away. I have however seen good effect from half doses of the common fever-ball made up with green Barbadoes naphtha. I am far from regarding this mineral production as the panacea which some have represented it to be, but I have seen it, and not unfrequently, useful here.

Chronic Cough in Cattle.—Chronic hoose in cattle is a serious complaint. The beast that labours under it rarely fattens kindly, and it is too frequently the foundation of pulmonary consumption. This disease is principally or almost always referable to the lungs, and mostly to the bronchial passages in these animals, and should be treated with half doses of the medicine that was recommended for catarrh, and combined with the naphtha. The case should not be abandoned while the affection is confined to the lungs, but when other organs begin to be involved, and particularly when dysentery accompanies chronic hoose, all hope is fled.

ON THE

MODE OF ACTION

OF THE

PNEUMOGASTRIC NERVE.

By JAMES CARSON, *Jun., M.B.T.C.D., Liverpool.*

A MEMOIR having the above title was published by MM. Breschet and Edwards, in the 7th volume of the *Archives Générales de Médecine*. In their paper these physiologists confined themselves to the investigation of the influence of the pneumogastric nerve on the function of digestion. By a series of well-arranged experiments, they were enabled to reconcile the discrepant effects observed, on one side, by Blainville, Philip, and Hastings, and on the other by Magendie, of the section of this nerve. In admitting the restoration of the injured function when a stream of galvanism was directed through the nerves, they at the same time showed that the same restoration was effected by its mechanical irritation. And in depriving the nerve of its supposed chemical influence in digestion, they have proved that it aids that function, merely by influencing the muscular motion of the stomach by which the food is brought in contact by renewed surfaces, with the digesting surfaces of that viscus. Analogy would lead us to suppose that the function of this nerve as it is distributed to the lung was equally simple. That it is not a chemical influence which is exerted by it in the changes which take place in the blood and the air, may be argued from the fact, that the fibrils of this nerve are distributed over the whole of the bronchial tubes, whereas these changes are admitted to be effected in the cells or the more minute tubes alone. In the following paper a part of the mechanism of respiration will be pointed out, I believe not hitherto noticed, over which this nerve presides, and whose derangements are sufficient to account for the serious results of its section or lesion.

In the splendid work which Russessen has published on the minute anatomy of the lungs, he has depicted a series of muscular fibres investing the bronchial tubes. These he has represented as not only existing in the larger tubes, but also extending to the more minute bronchiæ. In the mammalia, an evident provision is made for their contraction, in the deficiency which exists in the posterior parts of the cartilaginous rings of the larger bronchiæ. I shall assume their existence in the smaller tubes, depending on the authority of Russessen, and on one or two phenomena only explicable on this supposition. The function of these muscles has not been hitherto, I believe, satisfactorily explained. Some anatomists have argued against their existence from their utter uselessness, and others have merely admitted them to explain some of the phenomena of disease. The following appears to me the proper explanation of the part which they perform in the mechanism of respiration.

The cavity of the lungs into which the air enters may be divided into two parts. If the boundaries of these be not pointed out by their anatomical characters, a physiological distinction must be admitted between the tubes conveying the air and the cells in which the changes take place in that fluid. Around the tubes alone I should suppose the muscular fibres to exist. It is to them that the pneumogastric nerves are distributed.

In inspiration these muscles, in concert with the other respiratory muscles, contract. They produce the effect of diminishing the cavities of the tubes, while the diaphragm, intercostals, and other inspiratory muscles, increase the general capacity of the lungs. The result of these combined motions is a dilatation of the cells, and thus a greater surface of their lining membrane by which the air is changed is exposed to a greater quantity of air. The dilatation produced in the cells by this mechanism is greater than that which would be produced on the supposition that the tubes were inert, by the quantity by which the muscles diminish the tubes, together with the quantity by which the latter would have been increased in the general dilatation of the lungs. If we consider the great proportion which these tubes form of the capacity of the lungs, the effect produced cannot be inconsiderable. Whatever be the view of the mode by which the changes are induced in the blood by the air, the condition of parts in this way produced is undoubtedly the most favourable for effecting them. The mixture, moreover, of the fresh with the polluted air is more thoroughly effected by the mechanism in question. If the above theory be correct, I think it is not difficult to explain the function of the pneumogastric nerve in the lungs. Distributed to the muscular fibres of the bronchiæ through their contraction, it renews the air, and increases the surfaces of the cells by which it is exposed to the blood, performing an analogous function in respiration to that which MM. Breschet and Edwards have shown to be performed by it in digestion. The lesions of this nerve will be attended with consequences proportioned to the importance of the functions over which it presides. Dr. Philip was so struck with the resemblance of the effects of its section to asthma, that he did not hesitate

to attribute the spasmodic and continued asthma to a neurosis of this nerve. And if we consider that a constant attendant on these diseases is a severe fit of dyspepsia, we may recognise the lesion of the nerve in that of both the functions over which it presides. These diseases I should suppose to depend on paralysis of the muscular apparatus which I have above explained; and their difference, which is merely one of degree, depends on the greater or less extent of that paralysis. Cullen has attributed the phenomena of spasmodic asthma to a spasm of the bronchiæ, to which explanation Laennec has acceded, pointing out these muscles as its seat. In favour of this opinion Dr. Forbes, in his paper on Asthma, published in the "Cyclopædia of Medicine," has cited the stethoscopic phenomena. In the paroxysms of this disease the respiratory murmur is not distinguishable. This total absence of sound must depend, on the supposition of spasm, on a complete occlusion of the tubes in which the sound is formed, otherwise the diminution of these alone would be attended with much increased sound. But it is well known that the sufferers in this disease are conscious of the entrance of the air into the lung, and therefore the diminution of the tubes could not be complete. But suppose the disease to depend on paralysis of these muscles, then the air, instead of passing through diminished tubes, enters into a comparatively free space formed by the dilated tubes, and the resistance to its passage is so small as not to excite the least sound. The dyspnœa arises from the incomplete development of the surfaces of the cells, as explained in the former part of this paper.

There are two phenomena which I shall cite as proofs of the muscularity of the bronchiæ being, I believe, only explicable on that supposition; viz. puerile respiration and the active dilatation of the lungs observed by Laennec.

Puerile respiration is known to take place when a lung, or part of a lung, is rendered impervious to air. In the sound lung the respiratory murmur increases to such a degree as to resemble the sound of breathing in infants. This lung is said to take on a compensating action. The proper explanation of it is this: in order that a larger surface of the cells of the sound lung may be exposed to the atmospheric influence, the tubes are proportionably diminished. It is to the increased resistance which they oppose to the passage of the air that the sound is to be attributed.

Laennec has observed, that if the parietes of the chest be removed in a living animal, although by this means the mechanism by which inspiration is generally supposed to be performed be destroyed, the lungs, during the violent efforts which the animal makes to inspire, are dilated.

This he has explained by supposing an active expansive power in the cells themselves. As I am not aware of any analogous process in the animal economy, I have less hesitation in suggesting, as a better explanation, the following:—During inspiration, all those muscles which are associated in this act still contract. Among these are the muscles investing the bronchial tubes. By their contraction a portion of the contents of the tubes, greater in proportion to the violence of the inspiration, will be thrown into the cells, and the dilatation which takes place in these gives the appearance of a general dilatation in the whole lung.

March, 1832.

THE PRELIMINARY DIARRHŒA AND CONSECUTIVE FEVER OF THE MALIGNANT CHOLERA;

FEATURES ALIKE, OF THAT DISEASE, IN INDIA AND ENGLAND.

To the Editor of THE LANCET.

SIR,—Observing with surprise, by your report of the proceedings of the *Westminster Medical Society* on Saturday evening the 10th instant, that an attempt was then made by a gentleman of so justly-esteemed literary reputation as Dr. James Johnson, to foster the unaccountable delusion, of late very generally entertained, that consecutive fever is unnoticed in the published accounts of the epidemic cholera of India, you may perhaps deem it worth while to point the attention of your readers to the following extract from the Report of the Bengal Medical Board, published at Calcutta so long since as the year 1819.

After giving a minute history of the manner of attack and *general* symptoms, the Report enters into an elaborate detail of the *varieties* that the symptoms would occasionally present, and then gives the following luminous description of what ensued when the system succeeded in "rallying from the rude shock it had received."

"When the disorder ran *its full course*, the following appearances presented themselves:—What may be termed the cold stage, or the state of collapse, usually lasted from 24 to 48 hours, and was seldom of more than three complete days' duration. Throughout the first twenty-four hours, nearly all the symptoms of deadly oppres-

sion, the cold skin, feeble pulse, vomiting and purging, cramps, thirst, and anguish, continued undiminished. When the system showed symptoms of revival, the vital powers began to rally, the circulation and heat to be restored, and the spasms and sickness to be considerably diminished; the warmth gradually returned, the pulse rose in strength and fulness, and then became sharp and somewhat hard; the tongue grew more deeply furred,—the thirst continued, with less nausea,—the stools were no longer like water (*seethings of oatmeal* the Report describes them in its general account),—they became first brown and watery, then dark, black, and pitchy, and the bowels during many days continued to discharge immense loads of vitiated bile, until with returning health the secretions of the liver and other viscera put on a natural appearance. The *fever, which invariably attended this stage of the disease, may be considered to have been rather the result of nature's efforts to recover herself from the rude shock which she had sustained, than as forming any integrant and necessary part of the disorder itself.*—It partook much of the nature of the common bilious attacks prevalent in these latitudes. There was the hot dry skin; foul, deeply-furred dry tongue; parched mouth; sick stomach; depraved secretions, and quick variable pulse, sometimes with *stupor, delirium, and other marked affections of the brain.* When the disorder proved fatal after reaching this stage, *the tongue, from being cream-coloured, grew brown, and sometimes dark, hard, and more deeply furred; the teeth and lips were covered with sordes;* the state of the skin varied, chills alternating with flushes of heat; the pulse became weak and tremulous; catching of the breath, great restlessness and deep moaning succeeded, and the patient soon sank insensible, under the debilitating effects of frequent dark, pitchy, alvine evacuations."

The Medical Board of Bombay, finding the report of that of Calcutta in general faithful, and strictly according with the symptoms of the disease observed within the limits of their jurisdiction, adopted it *verbatim*; but to the above passage they have appended the following commentary: "We shall only therefore mention, that the subsequent fever which it appears has generally accompanied it in Bengal, has been but little, if at all, observed on this side of India; and, as we have before noticed, may be owing in a great degree to the more extended influence of those causes which are known to produce the bilious remittent fever as an epidemic in the Bengal provinces, than on this side of the Peninsula; for it can scarcely be supposed that a disease so uniform in its attack and in its course should, as it were, deviate from itself in any considerable degree, without the agency *of some local cause*; and *we entirely agree in the opinion, that it cannot be fairly considered as forming a part of it.*"

Now, Sir, supposing the circumstances in the history of this interesting epidemic had been reversed,—that it had first broke out in this country,—that after an interval of several years it had found its way to India, its progress being traceable in a continuous line from Southwark to Bombay,—and that the authorities in the latter place had found the description of the disease published in London so true to the letter as to adopt it as perfect, but that consecutive fever had been seldom if at all observed to attend it at Bombay,—I ask, could they have worded a passage more sensibly or appositely than the above? For Bengal read "Great Britain," and for the bilious remittent fever as an epidemic in the Bengal provinces, read "fevers of the typhoid type as epidemic in England," and the parallel will be perfectly complete. I would further ask, Has consecutive fever been as "invariable in its occurrence" in Europe, as from the official report it would appear to have been even in Bengal?

What I have quoted, Sir, will, I trust, prove sufficient to undeceive your readers, if there be any yet ignorant of the fact that this fever is not a feature of the malady which has sprung up since the disease has made its irruption into Europe. I have taken these passages from the 64th No. of your contemporary, the *Edinburgh Medical and Surgical Journal*, published in July 1820, in the consecutive volumes of which, from the year 1819 to the present time, your readers will find a series of able articles and communications on the subject of this pestilence which will amply recompense the trouble of a reperusal, and will I doubt not convince most of them, as I own it has done me, that the disease we have now in this metropolis is perfectly identical with what was once the scourge of India;—and this independently of the expressed opinions of the numerous medical gentlemen who have recognised in the prevailing epidemic a perfect identity of symptoms with those of which they have seen so much, and treated so many cases, in the eastern hemisphere.

I have already trespassed so much on the valuable space of your Journal, that I fear to request any further indulgence. The following passages, however, extracted from the pages of the work I have named, are so characteristic and striking, as bearing on the identity and disputed points in the history of the diseases, that I trust you will deem them worthy of insertion.

Describing the symptoms of the collapse stage, the Bengal report says,—

"The action of the heart and arteries now nearly ceased; the pulse either became altogether imperceptible at the wrists and temples, or so weak as to give to the finger only an indistinct feeling of fluttering. The respiration was laborious and hurried, sometimes with long and frequently broken inspirations. The skin grew cold, clammy, covered with large drops of sweat, dank and disagreeable to the feel, and discoloured,—*of a blueish-purple or livid hue.* There was great and sudden prostration of strength; anguish and agitation. The countenance became collapsed, the eyes suffused, fixed, and glassy, or heavy and dull; *sunk in their sockets and surrounded by dark circles, &c.*"

The first notice of the novel characters the disorder had assumed since 1817 that I find, is contained in a communication by Dr. Anderson to the editor in the number for July 1819. The history of the symptoms transmitted at this early period is in exact accordance with all others that have subsequently appeared,—"the matter passed (says this gentleman) is watery and free from bile, like barley-broth, rather muddy, sometimes glary like white of egg;" and again, "After some hours the pulse sinks, the motion of the heart becomes fluttering, and soon ceases to be perceptible; the extremities become cold, the skin *shrivelled* from want of blood in the vessels, the countenance collapsed, the eye sunk and glazed, &c." Further on, "The disease most frequently makes its attack after the patient has been asleep for several hours, when it may be supposed that those reservoirs of nervous influence, the ganglions, are in some measure exhausted, and unsupported by the exertions of the brain and spinal marrow, at this time recruiting themselves in sleep. The whole train of symptoms is of the nervous order, and not inflammatory, &c." Dr. Anderson is here illustrating the doctrine by him first propounded, for aught I know to the contrary, *that the cause* affects primarily the system of the par vagum and ganglions; and among numerous facts adduced in proof of his hypothesis, this gentleman adverts to the following: "In this deep distress and agony, it is wonderful to see how clear the understanding generally continues to the last, and the senses unimpaired."

Again, Dr. Rankin, in a communication published in the 74th No. of the same journal (January 1, 1823) after remarking the absence of bile in the evacuations, &c., goes on:—"The symptoms are infinitely various in degree, though perhaps never in kind, except from some internal complaint or other casual agency. In all the cases which I had an opportunity of seeing, the disorder was preceded by general lassitude, frequently ending in shivering, resembling an ague fit." "The eyeballs sink into the sockets; the extremities grow cold; and the skin, clinging as it were to the bones of the face, gives it those ghastly appearances which constitute the *facies hippocratica.* In this stage, the pulse, feeble from the beginning, is seldom perceptible at the wrist." This gentleman's communication is perhaps the more valuable from a circumstance he mentions at its commencement; viz., that it relates chiefly to the phenomena of cholera as they appeared in the town of Jessore, where he then resided, he having had but little opportunity of consulting other members of the profession, and offering only an exposition of his own practice and opinions in treating the disease.

It has been more than hinted, that premonitory symptoms were not observed in India. Take the following passages in refutation.

"The disease sometimes at once, and as it were momentarily, seized persons in perfect health; at other times, those who had been debilitated by previous bodily ailment. Sometimes the *stomach and bowels were disorded for some days before the attack,* which would then in a moment come on in full force, and speedily reduce the patients to extremities."—*Bengal Report.*

"The attack of this epidemic is usually sudden and violent, but in a great majority of instances not without some premonitory symptoms. It is frequently preceded by a simple diarrhœa, continuing several days, and still more commonly by other slight affections, which are more characteristic of the disease. Most commonly it is in the middle of the night, or early in the morning, that these ominous disturbances are first felt."—*Orton.*

"The disease," says Mr. White, "commonly begins with a watery purging, unattended with griping or any pain. At an interval of from half an hour to five or six hours; and sometimes without any interval, the patient vomits a white fluid, uncombined in any instance with bile, of which there is abundant evidence in every quarter. The spasms in the division of the army from which this description is drawn, made their attack at no determinate period of the disease, but in general not for many hours after the commencement of the vomiting and purging."—*Dr. M. Good's Study of Medicine,* vol. i.

In conclusion, Sir, I would request the doubters of identity, if such there still be any, not to waste their time in vain brawling and idle disputes, but quietly to retire to their closets, and read, mark, learn, and inwardly digest, what is written in the early history of this epidemic, and then

decide for themselves if there is any circumstance, feature, symptom, character, point of practice, or doctrine, of which we have heard since the irruption of the disease into Europe, that has not its counterpart in the long-since-recorded annals of its ravages in the East.

With many apologies for this very long respass,

I am, Sir,
Your very obedient Servant and
constant Reader,
W. G. W., M.D.

——— near London,
Mar. 28, 1832.

ESSAYS
ON
ANIMAL ACTION.

By WILLIAM DOBSON, *Esq.*, *Surgeon.*

No. 1.
INTRODUCTION.

THE nature of muscular motion affords a theme of as interesting and useful a kind as can engage the attention of the physiologist. By the agency of the muscles we move from place to place, many of the vital operations are performed, the blood is circulated, and respiration is effected. And the investigation of muscular action will assist us to obtain more correct ideas as to the manner in which certain actions in a healthy body are performed, enabling us thereby to account more satisfactorily for a vast variety of pathological phenomena which have hitherto been totally inexplicable.

However abstruse may be the subject, and however little may be known of it, its investigation is one of imperative necessity. If we cannot discover the essence which directs the various animal movements, we may, by a careful generalization of the facts already ascertained, and by the discovery of new ones, establish a system on a more certain basis, and one more harmonious in its superstructure, than any which now exists. The facts which have been acquired relative to muscular motion, are few. We know that a muscle possesses the property of shortening and elongating itself; that certain muscles contract in obedience to the will, and that others are removed from its dictates; that a few are neither entirely voluntary nor involuntary, and that there are certain muscles which play a particular part when the breathing is disordered; and which on ordinary occasions, exhibit the emotions of the mind. Hence a division has obtained of grouping the muscles into classes, consisting of the voluntary, involuntary, mixed, and respiratory. The essential property of a muscle is contractility, yet we notice a remarkable difference in the habits of executing this action; and we therefore presume that there *must* either be a difference in the mechanism of the parts, or that the moving forces must be dissimilar. But previously to our investigating this circumstance, we must examine what a muscle is, what is its mechanism, and how it is related to, and dependent on, the other parts of the body.

Prior, however, to these inquiries, it may not be impertinent to allude to a few of the means we possess for unravelling this intricate subject. These appear to be, demonstration, analogy, and pathology.

1. *Demonstration*; or, experiments on animals. This strikes the inexperienced observer as a necessary agent, as a means which ought not to be omitted in the analysis of animal action. I concede its paramount utility in a number of cases, but equally deny its applicability to the present subject. I have myself performed numerous experiments, and assisted at others, and have had reasons to ascribe to them a certain value; but on the present occasion, where the situations are so complex and indeterminate, to divide a nerve or a muscle, or to irritate them with a knife to see their actions, would be no better than the conduct of the boy who broke his instrument to find the seat of the musical sounds. By experiments we have collected a number of facts; need we specify those of Bell and Magendie, and others? I would not wish to attempt to undervalue, nor to declaim against, the use of experiments, but merely to allude to their limited efficacy—to their want of invariable applicability, and the injury which must result from the neglect of other means. However potent an instrument experiment may be in the hands of the chemist, it is not so available by the physiologist. The former may employ it, so that he can explore with almost miraculous certainty the nature of his materials, while the latter can only expect to arrive at conclusions far from satisfactory; his deductions will be conjectures, and his theories, fanciful hypotheses.

2. *Analogy*. This is our next instrument. This term has an extended signification, and can be as extensively employed, but in this and the following essays we shall confine it to the comparison of structure, and similarity of phenomena, conjoined. If we look into the wide field of nature, we every-where perceive the applicability of this principle to the disco-

very of the nature of things. When a plant is examined, it is found to possess certain external and internal characters, and observation shows that it buds and blossoms at a certain period of the year; and that it is a nutritive or a medicinal, an inert or an active agent. The system of Jussieu is based on this principle. The zoologist applies it to explain the similitudes and dissimilitudes of the animal kingdom. And it equally claims the attention of the philosopher who investigates animal organisation in its minuter parts. If we find two parts in an animal bearing a strict similarity in their external appearances, and in their internal mechanism, ought we not to inquire whether they do or do not perform similar offices?

3. *Pathology.* This aids in the elucidation of natural action, but the evidences which it affords are only *negative*: therefore, not so ponderous in the delicate scale of science as *positive* testimony. Pathology has been lauded by some as the only sure guidance to physiology; but pathology alone would be an "ignis fatuus," which would often mislead; it must be conjoined with demonstration and analogy. These, when extensively applied, are the talismans by which the operations of the frame may be discovered.

ON THE STRUCTURE OF MUSCLE.

I do not conceive it pertinent to my object to dwell on the minute muscular structure. I merely state, that there is a certain fundamental arrangement of matter, disposed in a series of fibres, which are placed in a parallel direction, and united by cellular tissue, permeated by blood-vessels, nerves, and absorbents, constituting a separate and distinct viscus, hence entitled a muscular organ. Lewenhoek indulged in some vague speculations regarding the ultimate organisations of a muscular fibril, as he did on the globules of the blood; but without arriving at any satisfactory conclusions. His microscopic investigations have led physiologists to believe, that a muscular filament consists of a tube containing little circular balls, which have been designated muscular globules.

Redness of colour is unquestionably no criterion or characteristic quality of a muscle. In the mammalia it is always present, but in birds, especially the domestic fowl, the muscles are nearly white, wher eas in birds of the field they approach towards a scarlet colour. In short, exercise modifies materially the colour of the mucles. Every one is aware of the difference of colour in the wild and the domesticated rabbit. The cause is clearly owing to the greater quantity of blood which circulates through the muscles of those that sustain great muscular expense. Yet in fish that employ great muscular exertions in diving through the dense medium in which they reside, we find the muscles are usually white. There are a few examples of red muscles in fish; we may instance salmon.

The epicure may perhaps find in this circumstance a reason for his preference to particular dishes!

ON THE PROPERTIES OF MUSCLE.

Before the time of Haller little was understood respecting the action of muscles. His philosophical mind when directed to this subject, soon perceived a prominent phenomenon, a consciousness of impressions, and he denominated it "*irritability*." Haller conceived, and he has many eminent proselytes, that irritability resides in the muscular fibres themselves. But many have impugned this idea. They imagine that this conscious or perceptive principle is confined exclusively to the nerves. To me their arguments are as conclusive as human research can arrive at. But how uncertain experimental data are in this case, is nowhere more clearly exemplified. How are we to decide whether a muscular fibre could or could not undergo the charge of contraction, without a conjunction with some nervous filament? Each muscle receives a nerve, or more, and it is a fair presumption, that each of its fibres does the same, and is diffused throughout. Hence when we irritate a muscular fibre, its nervous filament is necessarily stimulated. It is clear that direct experiments on the part can be of no avail, the two tissues being so inseparably blended. How are we to determine? By circumstantial evidence, and by balancing the arguments and facts which have been advanced on both sides.

The grand argument of Haller in proof of the irritability of muscle is founded on the fact, that when a muscle is severed from the body, and then cut or irritated, it contracts, thus exhibiting a power of feeling impressions. Denying that this sensibility or irritability resides in the nerves, he makes a distinction between the *vis insita* and *vis nervosa*. The former he conceives to be inherent in the muscle, and gives to that organ its irritability; whilst the offices of the vis nervosa, he presumes, are to convey to the mind impressions, and to reconvey the mandates of the mind or volition.

The objectors to the Hallerian doctrine appeal to numerous acknowledged facts. If the nerve going to a muscle be divided, the muscle loses entirely its voluntary contractility, the will may dictate, but it will not be obeyed: but if, as occasionally happens, the divided nerve reunites, voluntary motion is again renewed. Yet this fact weighs nothing; for the muscle will con-

tract, when stimulated by a mechanical or chemical agent. Does not this depend on the irritability in the muscle itself? The answer is, no? The nerves which are *contained* in the muscle still preserve their perceptibility, and thence induce the muscle to move when the nerves are roused into action. That irritability does reside in a muscle no one will deny, and that the nerves are the reservoir is equally as palpable.

Then, irritability is a term used to denote the existence of two vital properties in a muscle, viz., sensation and a something which causes the muscle to move.

Contractility, or the capability of a muscle to shorten itself. This term includes two phenomena, viz. the states of contraction and relaxation. Now, when a muscle contracts the centre swells and the extremities become more approximated, and in a short time the action ceases, and the muscle is restored to its natural state. It has been asked, Is the relaxation an active or a passive act? It appears, certainly, to be nothing more than a passive act: when the cause which produces the contraction is removed the effect ceases: when the will discontinues its application, relaxation uniformly follows. But with reference to irritability; how is the question to be settled? Even admitting the nerves to be the receptacles of irritability, or perhaps speaking more intelligibly, the residences of that principle which cognises impressions, and induces voluntary movements; yet there most indubitably exists, in the muscular fibres, an aptitude to be impressed, a perceptiveness of impressions, and a reactive power manifestable. The cause or causes of sensation and motion have not been ascertained. Hunter's idea, that because some analogy subsists between those principles and the galvanic aura, he went so far as to presume, that galvanism might be the agent by which the brain communicates with the sensitive and motive organs. Dr. Wilson Philip has attempted to establish an identity beween the nervous fluid and galvanism. But I conceive, with many others, that his premises are erroneous, and therefore his deductions untenable. This we shall have to discuss in a subsequent paper.

How wonderful if the galvanic aura be a modification of the mind! We know it to be a powerful agent; both nature and art amply testify. In the arts it performs curious and important operations; but how terrible are some of its operations in nature! Earthquakes and volcanoes, the terror of the ignorant and the wonder of the wise, are its products; by it the most stupendous rocks have been cleft in twain, and cities, once famous perhaps for their genius and legislation, engulfed in the abyss of the earth.

How opposite the effects! Can the galvanic aura *feel*? And can it carry to the brain, the great emporium of the mind, a knowledge of surrounding impressions? If it can, then it is assuredly a mental attribute: for to feel is to know. To perceive implies a perceptive principle, which is identical with the mind. How produced we will leave to the materialist and the theologian to explain. It is sufficient for us to know the facts, that in the nerves of sensation resides a sentient principle, which conveys to the brain a knowledge of surrounding impressions; and a motive principle in the motive nerves, fulfilling the dictates of the mind.

ATTEMPT TO SHOW THAT THE

MALIGNANT CHOLERA

AND THE "CONGESTIVE FEVER" OF ARMSTRONG ARE THE SAME DISEASE.

To the Editor of THE LANCET.

SIR,—After the numerous and some ably-written articles on cholera, it may appear tedious and presumptuous in me to offer an opinion on the subject; and did I not feel that I was doing an act of justice to the memory of another, I might still remain silent.

In reading many of the articles and reports of the discussions on this all-engrossing medical topic, I have sought in vain for any allusion to the opinions of the late Dr. Armstrong. But I observe with regret that most of the writers have been so intent in thrusting themselves before the public, that they have made the interests of science subservient to their own selfish purposes. They have ranged themselves into different classes, and fought for *triumph* not for *truth*—they may obtain an ephemeral notoriety, but will be buried in oblivion when the panic, which called their puny powers into action, shall have ceased.

How great and how pleasing the contrast, to turn from these men and contemplate the genius of Armstrong! Pursuing the study of medicine in the true spirit of the Baconian philosophy, he, exerting the powers of a master mind, emancipated himself from the shackles of antique dogmas, scholastic prejudices, and a slavish regard for names, and resolved by accurate observation and induction to arrive at *truth*. By applying the principles of that great man, to whom philosophy owes so much, to the science of medicine, Armstrong has gone far in dissipating fanciful systems and false

theories, pulling down ancient fabrics, and laying the foundation of a temple to medical science, which is only to be entered through the portals of truth.

After witnessing several cases of the disorder now prevalent in this country reputed to be cholera, I am convinced that it is the disease so ably and accurately described by Armstrong under the name of *congestive fever*. He contended that congestive fever proceeded like other fevers from *common* and *peculiar* causes, and has pointed out the symptoms which distinguish the congestion in the different organs.* In the *brain* by giddiness, prostration of the muscular power, weakened and oppressed pulse, &c. In the *spinal chord* by convulsions, spasms of the extremities, &c. In the *heart* and its associated veins by a load and sensation of great weight in the region of the heart, and want of power to breathe; there is no distress in respiration, but an inability to do so. In the *bronchial membrane* and lungs by a weak respiration, and a violet or leaden hue of the countenance. In the *liver* and its associated veins by nausea, retching, and vomiting; distension of the epigastrium and diarrhœa, the stools being like rice-water. In all the forms of congestive fever the skin is cold and the tongue is moist, and covered with ropy mucus. The remote causes of this form of fever are described to be *depressing agents*, and the predisposing cause, *debility*. Knowing to what an extent these causes exist among the poorer class of our fellow creatures, we shall not be at a loss to determine why this disease has been so prevalent among them. The disease now prevailing in this country appears in mild cases to be congestive fever proceeding from common causes, and in some of the more severe to be congestive fever proceeding from peculiar causes, or, as Armstrong has termed it, *congestive typhus*. In reading the description given by Drs. Barry and Russell, in which they say, when reaction comes on, the patient labours under a continued fever not to be distinguished from ordinary fever, which sometimes terminates in perspiration, and sometimes in a fever much resembling typhus, we must be still further convinced, that the disease vaguely and improperly called cholera is merely a prolongation of the first or cold stage of common or typhus fever.

If this view of the subject be correct, we do not stand in need of any more sanitary regulations than are required in typhus fever, which few will believe to be contagious, except to the predisposed, where the rooms of the sick are filthy and ill-ventilated.

In conclusion, I cannot avoid expressing my regret at the manner in which this subject has been discussed by the profession, and at the lamentable want of confidence which the public consequently feel in medical men and medical measures. I would advise the members of our profession for the future to discard all prejudices, petty jealousies, and party animosities, and cultivate the study of medicine in the true spirit of philosophy, by which means alone we can advance our science, elevate ourselves, and effectually benefit our fellow-creatures. I am, Sir, yours, &c.,

W. Simpson.

Hammersmith, March 29, 1832.

* See Lancet, vol. v. p. 40.

EXTRAORDINARY NARRATIVE.

[Under the above heading a letter appears at page 441 of our present volume, written by Mr. Hoare, a most respectable surgeon of Warminster, detailing particulars of a young man of the name of Higgins, who, though fully endowed with the power of speech, would never speak to his father, nor, as then believed by Mr. Hoare, to any other male person.* We this week insert a farther communication from that gentleman on the subject, the public press in his neighbourhood having, as he observes, treated the statement alluded to as too strange to be credible.]

To th Editor of The Lancet.

Sir,—My communication (see Lancet, December 24, 1831) respecting the young man of the name of Higgins having occasioned many inquiries, much sarcastic observation, and many expressions of incredulity, I took the liberty of writing to the

* We reprint the following portion of Mr. Hoare's letter.

"The wife of a Mr. Higgins, a farmer of Baltonsborough, near Glastonbury, Somerset, having brought him three daughters in succession, and no son, he was so disconcerted at the repeated disappointment, that he vowed, should his next child be a daughter, he would never speak to her. On the approach of his wife's fourth confinement, he repeated this vow. To his great joy, his wife gave birth to a *son*, and nothing occurred to lessen his satisfaction, until the child began to speak. To his astonishment and distress he then found, that, while the boy would readily address his mother and sisters, and indeed any female, nothing could induce him to utter a word to his father, or any male person. This singularity continued during the whole of his father's life (30 years)."

Rev. Dr. Colston on the subject, who has kindly favoured me with the following circumstantial reply. This, if not sufficient to convince the incredulous, will at least exonerate me from the imputation of having published an extraordinary statement on light grounds. I am, Sir,

Your obedient servant,

JOHN HOARE, Surgeon.

Warminster, March 17, 1832.

"Lydford Rectory, Somerton, March 4th, 1832.

"SIR,—Immediately on the receipt of your letter I sent for Eli Higgins, a tenant of mine, and the man who has excited so much interest from his inability to speak to persons generally. It is true he never was able to speak to his father, who resorted both to violent and kind means to induce him to do so, without effect. With his mother and sisters he frequently conversed without any extraordinary effort, and these were the only females with whom he ever held conversation; but he admitted, on my examining him minutely on the subject, that he had spoken to the Rev. Mr. Bowen, of Bath, and Mr. Beauchamp, a land surveyor, of West Pennard, in this county, about four years since; but he was unable to account for this exception, as he wished much to speak to every one, more particularly his father, who has been dead nearly six months. After a lapse of three days he could speak with fluency to every one, and immediately after the funeral of his father he called on me to take the small estate that had been occupied by him, and entered fully into conversation; which greatly astonished me, as I have known him from his earliest days, and made many attempts to get him to speak to me; once in particular, wishing to know the hour of the day, I asked him for his watch, which he gave me, and I threatened to keep it if he would not ask for it, but in vain. He admits from what he had heard, that he was strongly impressed with the idea that on the death of his father he should have power to address every one without difficulty, which has proved to be the case. He had heard of the rash vow made by his parent when his mother was pregnant with him, that if the child were a girl he would never speak to it, but he could not attest to the truth of this from any authority but general report. Eli's appearance is delicate, and does not indicate strength. There is something very peculiar in his manner of using his mouth when he speaks, and the length of his jaw, from the point of his ear to his chin, is very striking; his voice is pleasing, and his manner of conversation sensible for his station in life. He is a hard-working, industrious man, and has always exerted himself to the utmost to promote his father's interest. You may make use of these particulars in any manner you please, and I remain, Sir, yours faithfully,

"W. H. COLSTON.

"To John Hoare, Esq., Surgeon, Warminster, Wilts.

"Below is the writing of Higgins, which I thought might be interesting to you.

"'Eli Higgins Aged 35 years in the parish of Baltonsborough in County of Somerset.'"

WESTMINSTER MEDICAL SOCIETY.

Saturday, March 31st, 1832.

Dr. SIGMOND in the Chair.

DISCUSSION ON THE CHOLERA.—QUESTION OF CONTAGION.—CASES AT THE BOROUGH HOSPITALS. — CHARGES AGAINST THE BOARD OF HEALTH.

Dr. WEBSTER asked if there were present any medical officer connected with the parish of St. James's, as he wished to call their attention to a case of supposed cholera which had occurred in that parish; in fact, just outside the walls of the room in which he was speaking. The patient, a working man, was seized last Saturday and died on Sunday. He was of dissipated habits, lived in a cellar, and had been subject to a bowel complaint. At six o'clock on the Saturday morning he went to his work, and on his way drank three pints of new ale, or wort; soon became cold and weak, and returned home before seven, when he had some rum. The symptoms were then much worse; he was cold, sick, and purged. He saw the patient at 10 o'clock on Sunday morning, and at 11 he died. Not a single other case had occurred in the neighbourhood, although his mother, brother, and father, were living in the same room with him. The disease, therefore, was not contagious. Besides this there was a school of thirty children, kept on the landing-place, only one of whom had been taken ill, and that one was absent on the day in question, on account of indisposition. The cholera, therefore, was not contagious. The workmen also at the place where the patient was first seized had remained healthy. The case was worthy of attention. Before sitting down he would read a statement of the number of medical cases admitted within some few years past into the institution to which he was attached. Statistic observations might throw

much light upon the character of the present epidemic.

	Med. Cases.
In 1825 admitted	195
1829	203
1830	198
From Feb. 15, 1831, to the present time	183

Mr. WALKER was present at the examination of the case related by Mr. Webster,—a case which Dr. Daun and some other gentlemen had pronounced to be as decided a case of malignant cholera, as they had ever witnessed. As to the man's previous life, he certainly had been in delicate health; he had been subject to stricture and retention of urine, which however had little to do with a disease of this sort. It was also true that he was drunk two or three times during the week in which he died, although he was actually reputed previously sober. Perhaps from being unaccustomed to drinking, a very little had so affected him. All had agreed that it was a marked case of cholera.

Dr. JOHNSON would advert to some circumstances which had taken place very lately in Guy's hospital. He did not speak from personal observation, but on very good authority, that of Dr. Bright. He had heard, then, that six or seven cases of cholera had happened in that hospital, each in different wards, without any connexion. Amongst those attacked, some were nurses, who had not been attending upon any fever patients. Now those who knew the situation of Guy's Hospital, would be inclined to agree with him that this circumstance was strongly corroborative of the idea that some epidemic influence was prevailing which struck individuals, independently of all contagion.

Mr. GREENWOOD thought that the fact of there being complete communication and constant intercourse between the wards of Guy's Hospital, put a decided negative on Dr. Johnson's argument. But why these representations of epidemic influence? How extensive must be the malaria! The disease was manifesting itself contemporaneously in several distant parts of the globe. Speaking of this simultaneous development of the cholera in far-separated places, he would point to an excellent illustration afforded by the triumph of medical chemistry. He alluded to the investigations of Drs. Rose and O'Shaughnessy, who had decidedly proved the chemical identity of the cholera of Berlin and this country.

Dr. GILKREST said, that to Dr. Johnson's statement it might be added also, that the cholera had appeared in St. Thomas's Hospital, where the cases were not only in different wards, but in opposite wings of the building. He had made particular inquiries into them, and could discover no trace of contagion. Touching the question of contagion, however, he would then state a fact lately related to him, of five persons in one family in Dublin, who were successively afflicted with the toothach!

Dr. GRANVILLE had come thither that evening absolutely full to choking with matters relating to the Central Boards of Health, and the sooner he could relieve himself of his burden the better. He had been very busy in the examination of the official documents published by the Boards, which he really found overflowing with contradictions. In making an epitome of these inconsistencies, he disclaimed feelings of ill-will towards any party; and would therefore proceed at once to exhibit what might be aptly called "cholera cross-readings," or "a contrast between words and deeds." (Here the speaker entered into an examination of the "manifestoes" and other official documents issued by the London Boards of Health, and comparing them with extracts from the periodical called the *Cholera Gazette*, and the reports of Drs. Russell and Barry, as commissioners in Russia.) His object was to show, that the opinions of the members of the boards were at variance with the directions given by the boards themselves, and that the sentiments respecting the principles of the disease, published by them at one time, differed materially from those of another period. He laid particular stress upon the statements of the period of incubation of cholera, and the diversity of doctrine regarding the *atmospheric* and *contagious* conveyance of the seeds of disease. Little wonder was there therefore that *the Society* should have gone on debating all these questions ever since last October, without being enabled to come to a satisfactory decision. In conclusion, he adverted to the facilities which Drs. Barry and Russell represented themselves as having enjoyed through the kindness of the Russian physicians when at St. Petersburgh. But in England, when Drs. Barry and Russell had like opportunities of affording facilities to others, not the slightest aid was afforded to gentlemen for enabling them to investigate the cholera cases, even the doors, in some instances, being shut against them.

Dr. FERGUSSON could not suffer this reflection on the Board to pass without notice. The members of that body were far from objecting to the visits to cholera hospitals; and when the deputation from the Cholera Association waited on the Board, the members assured them that it was out of their power to give permission to do so. The obstacles were created by the local officers. He (Dr. F.) was one of the deputation,

so also was Dr. Granville, which gave him the more surprise at Dr. G.'s accusation.

Dr. GRANVILLE stated that he was by no means desirous of throwing the blame on the Board. His censure was directed against the officers in the parishes.

Mr. GREENWOOD thought that Dr. Granville had garbled some statements, and wholly omitted others, which were essential to the bearings of the case. He thought every reliance might be placed on the statements of Drs. Barry and Russell, even if they had occasionally differed. Their reputations were staked on an adherence to truth as to the question of contagion. All the medical men who had witnessed the diseases in India and England participated in a belief of it. As to the self-elected little coterie, the *Cholera Association*, one of them, Dr. Johnson, was an advocate of "contingent contagion;" but what the precise value was of the word "contingent," when tacked to that of contagion, he knew not. There was no acknowledged contagious disease amongst the whole order of exanthemata, which had not the same claims to "contingency." He had that week witnessed in a small court in Wigan-street a circumstance strongly corroborative of the doctrine of contagion. A woman was taken ill of cholera at No. 13, and died. A man, who lodged there, left the house and removed to No. 4, where he also was seized with symptoms of the cholera, but upon calling that evening he (Mr. G.) could not carry his investigation farther in consequence of the crowd collected around the house. And here he would take the opportunity of contributing his censure against those individuals who, by their letters in the public newspapers, had conduced to goad the people to mob those who, in the discharge of a benevolent duty, visited the afflicted victims of this disorder.

Dr. JOHNSON said that one of the gentlemen alluded to by the last speaker, Mr. Orton, before he left India, wrote a report to the Madras Board of Health, in which he gave a decided opinion that the disease was *not* contagious. That was written when the facts were before him, but in his closet in Europe he thought right to retract the opinion. He would mention a fact relating to this question which was not likely as yet to be known to the members. The proof sheets of the present *Edinburgh Medical and Surgical Journal* had been sent him, and he found that although a previous number had contained a long and talented article arguing strongly in favour of contagion, yet in this present journal the tables were completely turned. The editor had made a tour, and the facts which he had observed at Sunderland, Edinburgh, Musselburgh, and elsewhere, had made him a decided *non*-contagionist. Here then was one of the most influential medical journals converted, and by philosophic argument endeavouring to carry the same conviction home to the minds of others. This example he would particularly recommend to the attention of Mr. Greenwood.

Mr. ORTON being particularly called upon, adverted to Dr. Johnson's remarks respecting him (Mr. O.). He admitted that he had affirmed it as his belief that cholera was not contagious; but this was a hasty decision, and one formed after only three weeks' experience of the disease. He had, however, since seen the disease in England, and from the facts he had observed, his conclusion was that the cholera was contagious, or communicable from man to man.

Dr. JOHNSON. From facts witnessed since you left India?

Mr. ORTON said he deemed the mass of evidence on the *contagion* side of the question, perfectly irresistible. A particular instance had occurred to him when travelling a short time since. A woman in the coach who was returning from the north was suddenly attacked with vomiting, purging, spasms, and excessive debility. Her legs became blue. Some of these symptoms did not appear till after she had been bled. They appeared so much like cholera that he inquired if she had been near any persons affected with that disorder, when it was found that a gentleman had been travelling with her who had said that he came from Newcastle; that, moreover, upon her complaining of the cold, this gentleman had offered his cloak which she accepted, and wore for some time. The woman was confined at an inn, where the chambermaid who waited on her also was seized with the same disease.

Mr. SAMUEL remarked that a gentleman, a member of that Society, who at the first commencement of these discussions had avowed himself from all he had read to be a contagionist, had now *seen* the disease and declared his opinion that it was *not* contagious. (*Name, name.*)

Dr. SIGMOND as chairman observed that the Society were desirous of being favoured with the name of the gentleman alluded to.

Mr. SAMUEL.—It is Dr. Sigmond. (*A laugh.*)

Dr. SIGMOND was wroth at this, and resented such a reference to the chairman. He considered it unfair thus to allude to an individual while occupying the office of president. (Mr. CHINNOCK accordingly took the chair for a time while Dr. Sigmond entered into an exposition of his opinions respecting contagion, and the reasons which had induced him to adopt them.) He had

investigated the disease with zeal, and the result had thrown doubt upon the judgment to which reading in the first place had led him; though even now he could not say that his mind was exactly made up on the subject; yet, as far as he had been enabled to observe the disease, it certainly appeared to be non-contagious. The case of the man Sandiland had been held out as a special proof of contagion, but it seemed that the man had had a relapse since February 28th, which quite altered the face of the circumstance.

Mr. SAMUEL disclaimed all intention of saying anything that would be unpleasant to Dr. Sigmond.

Shortly after the meeting separated.

THE LANCET.

London, Saturday, April 7th, 1832.

THE hospital surgeons' method of answering the charge of neglect, brought against them by their dissatisfied and indignant pupils, is not without precedent, as the records of our criminal courts furnish innumerable examples of similar ingenuity; but it is not the less worthy of admiration because it does not possess the merit of originality. The pupils allege that the *dead-house* is scarcely ever visited by their instructors (instructors! heaven bless the mark), and that when *post-mortem* examinations actually take place under the superintendence of the surgeons and physicians, they are either conducted in private, or are instituted without any previous notice addressed to the students generally. What is the reply of the medical officers! Thus it stands. "Nothing is stated respecting *post-mortem* examinations in the 'Prospectuses' issued previously to the commencement of each medical session." Worthy of Ikey Solomons himself! True, the papers published by several of the hospitals speak not in decided terms of the transactions of the dead-house; but in the absence of all written contracts, cannot these men feel and understand that there exists such a thing as an *implied obligation*? There is no necessity, however, for making an appeal to a feeling of honour in an affair of this kind. The words of the "bond" are amply sufficient for one purpose, because it cannot be denied, except by men who appear to consider that the robbery of the student is the most important part of their professional duties, that the pathological information derived from the labours of the dead-house, is the great, the only solid basis upon which the surgical practice of the hospital can be founded. Is the subject of *pathology* excluded from lectures on *surgery*? Does it form none of those essays which are designed to teach the *science* of chirurgery? At some of the hospitals, however, the important operations of the "dead-house" *are* awarded a place amongst the terms held out in the printed *prospectuses*. In those of St. Bartholomew's for example we find:—"Morbid inspections, as opportunities occur; at one o'clock." What an engagement! At "*one* o'clock"—at mid-*day* or mid-*night*? Or, on *what* days? Why, of course, "as *opportunities* occur." Ingeniously-contrived loop-hole! So that, if there be no inspections at all, they first refer the student to the terms of the prospectus; and, secondly, vomit forth the denial of there being *any* "opportunities" at all. "Relations interfere"—"The friend object"—"The bodies are taken away suddenly by undertakers;" the evasions are easily concocted; and, in fact, *any* excuse is offered as a cover for a disgraceful breach of engagement. As Bartholomew's is one of the hospitals so bitterly complained of by the students, it may be useful, if not instructive, to hear the language which Mr. LAWRENCE addressed to his class in relation to this shamefully-neglected branch of study—morbid anatomy:—

"It must be the first business of the medical student to learn the structure of the body in its living actions; that is, to study

man in the state of health. These are the objects of the two sciences which are denominated anatomy and physiology. He *then* proceeds to the observation of *diseases*; he watches the circumstances under which they *arise*; he follows their *progress* and *termination*; he *explores* the *organic changes* which they *produce*, and learns to *connect* these changes with their appropriate *external signs* or *symptoms*; deriving from these *comparisons* the means of distinguishing the *exact seat* of disease, and predicting its course and event. He is *now* prepared to employ the external agencies, the *outward* and *inward* remedies, or the operative proceedings which may be necessary for removing disease and restoring health. When disease is studied in *this manner*, in reference to the whole body, it constitutes the science of *general pathology*."—*Introductory Lecture*, p. 35. LANCET, 1829—30.

In another part of his discourse Mr. LAWRENCE observed:—

"But the study of anatomy and physiology does not make us acquainted with *disease*: you may know the *structure* and *functions* of an organ *perfectly*, and yet be ignorant of its *diseases*. How then are these to be learned? *Not from* LECTURES, nor from *writings*; but by studying the great book of *nature*. You must frequent the *hospital* and the *sick chambers*, and observe diseases for yourselves. *Lectures* and *books* are AUXILIARIES, and, *under certain circumstances*, very useful ones; but they are of secondary importance, compared with the actual observation of disease."

"To know disease, then, you must see, examine, and closely watch patients; you must observe the *origin* and *progress* of the altered functions *during life*, and *then investigate*, *after death*, the *changes* produced in the *organisation*. * * * * *Demonstration* of the phenomena of disease on the patient by the *teacher*, and the actual observation of them by the *learner*, are the *only means* by which *real knowledge* can be acquired. The *facts* thus presented to the *senses* make a stronger impression than *any description*, even by the ablest *lecturer* or *writer*; while the information which a person *thus* acquires for himself from *nature*, can *always be depended on*, and is *never forgotten*. Between him who has only *heard*, or *read*, and one who has *seen*, there is the same difference in point of knowledge, as between a person who has merely perused the description of foreign countries, and another who has actually visited them."—*Ibid.* p. 40.

Nothing could be more truly or more happily expressed. But it is to be deplored that Mr. LAWRENCE prefers *precept* rather than *example*. If, in neglecting the duties of the dead-house, a man were ignorant of the injustice and cruelty he was inflicting upon the pupil, some excuse might be offered for him; far otherwise is it however with respect to that officer who, while he professes a thorough knowledge of the sacred character of the task which his station imposes upon him, makes little or no effort to execute it, although his labours are constantly invited by a ready and bountiful command of all the essential requisites for their complete success.

In a letter addressed to us by a pupil of St. Bartholomew's, the intelligent writer complains, "That from the 1st of October last up to the 20th of March, only *two post-mortem examinations* have been duly and publicly announced; that the *objects* in employing medicinal agents are not explained; that the student has to run with a multitude of others from one bed to another merely to see a nod or a wink from the surgeon, and to hear an occasional ejaculation—'Ah!' and that, with the exception of the regularity observed in the delivery of some of the courses of lectures, the whole establishment furnishes a correct notion of chaos." This communication is one of at least fifty received from the students of Mr. LAWRENCE's hospital. Another of the complainants declares, "That although he has directed an anxious eye to the door of the dead-house during the whole of the session, he has not seen the surgeons enter that apartment more than three times." Three times in *six* months! And can these officers have the unblushing effrontery to pretend that in thus neglecting to demonstrate the changes produced by disease, they violate no engagement with the students? Impossible. The impudence of even the Bats is not equal to it. Justly has it been remarked, that information derived through the *eye* is far more lasting than that acquired through the ear. Compare a well-conducted inspection in the dead-house

with the hour's chatter of a "regular lecturer" in his theatre, and of what value, of what practical importance or utility, does the latter appear? The worth of "chatter," and no more. Mr. LAWRENCE has well explained this point in his comparison between the actual traveller and the mere *reader* of *travels*. We strongly suspect, however, that at the time he was making this just reference he had forgotton his own resemblance to GULLIVER. With the day-book of *travels* in one hand, and the interesting, instructive *country* in the other, he vends the *story* and retains his grasp of the fact. In a word, with the *country* as perfectly at his disposal as the paltry work which pretends to give a description of its beauties and peculiarities he presents to his pupils the lying records, and withholds the demonstrative evidence of fact. He will neither journey for his own amusement, nor does he care to let others travel for their instruction. He praises, in order that he may enhance the value of that which it is not his intention to bestow, and labours to demonstrate the worthlessness of those wares for which he is in the habit of making such a liberal charge.* O, monopoly! thou unsightliest of devils; how we execrate thy name and practices!

It has been often remarked by gentlemen, who have had opportunities of observing the system of medical education pursued in the great hospitals on the continent, that, were *English* students aware of its immense advantages, they would not submit to the tyranny and exactions of which they are now the victims. This is altogether erroneous, and the individuals who hazard such an assertion, know nothing of the difficulties which students have to encounter in offering any resistance to the trammels imposed upon them by their relentless "hospital" instructors. Are not the *surgeons* of the hospital those identical individuals who figure as the Council of the College in Lincoln's-inn Fields? Are not the *medical* teachers intimately interwoven in the net of professional practice with the Court of Examiners of Apothecaries Hall? If then the student openly demand a restitution of his rights with regard to *post-mortem* examinations, or the remedy of any flagrant abuse, what is to protect him from the malice of his examiners when he applies for his diploma or license? Knowing, and justly dreading, the danger to which they may be exposed, in the event of their being at open war with their teachers, the students are obliged in a great measure to put up with the burden of existing evils, rather than incur the penalty of greater miseries. They know that the examinations at the College and the Hall are conducted *secretly*, —that the public are not present,—that the press is not present,—in fact, that there is nothing to shield them from the malignant ire of roused, indignant monopolists. Considering, therefore, that it would be an act of cruelty to impose upon the students the task of bringing their teachers to a just discharge of their duty, we shall direct the artillery of the community against the common mercenary traders in wounds and groans. We will see whether public opinion will not force them to comply with the conditions of the bond; and in order to bring upon these RATS and corruptionists their due share of public odium, we will, next week, furnish a general view of the manner in which the duties of hospital surgeons are discharged in the great eleemosynary institutions of the continent.

In closing this article, we once more commend to the attention of the reader, and particularly to that of the St. Bartholomew students, the extracts from Mr. LAWRENCE'S lectures, which have been herein submitted

* Surgical Lectures, St. Bartholomew's. Terms Two Courses (regular) £8. 8s.

Sir A. Cooper's charge for perpetual attendance upon his surgical lectures—not the worst in the world—was £5. 5s.

for their perusal. Once more do we entreat of them to reflect upon what that hospital surgeon *himself* says of the great value of post-mortem inspections.

The cholera has at length made its appearance in the heart of France. As yet, however, we have obtained a knowledge of the fact only through those un-exact channels of communication the newspapers. We abstain therefore this week from making any comment, or attempting to furnish any information on the subject, desiring rather to wait until we are in possession of such authentic documents as we can place with confidence before the medical public. In the mean time we cannot but express the gratification we feel at the noble manner in which the Parisian faculty have prepared themselves for the calamitous visitation. We hear of no disputes, ignorantly based, and obstinately defended, amongst them, relative to the question of "identity." No ill-timed or unavailing repining of the mercantile classes—no inflammatory addresses from the public press, denouncing cholera as a "humbug," and medical men as impostors. On the contrary, men in all departments of the profession have applied themselves to arrest the progress of the disease, and improve the condition of the poor, with a zeal and energy which contrast most strongly with the tardy and beggarly manner that has been exhibited on this side of the channel.

The non-professional French journalists express surprise that the disease has commenced in Paris instead of at some of the frontier towns. Did the French surgeons, who were lately in England, residing in the very centre of infection, undergo strict quarantine before re-admission to their own capital? There are men who will hasten to discuss the appearance of the disease in Paris weeks before even the great outlines of the question will be prepared for examination—fools who, we doubt not, have hours since rushed with their morsels of imbecility to the press. Men of true science, and anxiety for the truth, will be patient.

The Anatomical Pathology of the Malignant Cholera, illustrated by a series of Cases, with Dissections, &c. Collected and arranged by P. H. GREEN, Bachelor of Arts and of Medicine; Sen. Scholar of the Univ. Dublin, &c. 8vo. pp. 54. Highley, 32, Fleet-street.

WHILE the malignant cholera was confined to the British possessions in India, the anatomical relations of the disease were little understood; but as the complaint continued to advance westward, abundant opportunities have occurred for investigating the pathological nature; decidedly one of the best monographs on this subject was a small tract, published by the Medico-Chirurgical Society of Moscow, and entitled *Disquisitio Anatomico-Pathologica in Hominibus Cholera-Morbo extinctis.* This has been taken by DR. GREEN as the ground-work of a pamphlet on the anatomical pathology of cholera. He has added some cases with dissections performed in Berlin, Sunderland, and London, affording altogether an exceedingly clear and comprehensive view of the morbid appearances observable in persons who have been cut off by the disease in its different stages. It contains an account of twenty-one dissections, in eighteen of which the contents of the vertebral canal, with the other cavities, were carefully examined; each dissection is preceded by a brief account of the symptoms and treatment, and the cases are divided into two classes, according as death occurred in the primary or secondary stage of the disease. At the conclusion of the pamphlet, we have a summary of the appearances divided into three classes:—

1st. Those constantly seen in every case when the patient died during the stage of collapse.

2nd. Appearances less frequently seen, but not universally.

3rd. Appearances less frequently found, and usually attendant on the secondary stage.

Under the first class of appearances the author comprehends the six following:—

1. Some lividity of the surface of the body, especially of the nails.

2. Rigidity of the body, particularly of the lower extremities.

3. Dark blood abounding in the veins.

4. *Dark-coloured blood in both cavities of the heart and in the arteries, particularly those of the base of the brain.*

5. Proper vessels of the heart distended with blood.

6. Urinary bladder contracted, and containing little or no urine.

These are post-mortem appearances, which the author says are universally attendant on death occurring during the stage of collapse. We think, however, he should have omitted the contracted bladder, for though seen in a large majority of cases, it is not *universally* observable.

The following extracts relate to a subject of considerable moment, and may be quoted both for the permanent practical value and interest which attach to the subject of it.

Our readers may perhaps be acquainted with the case of the idiot boy who died in the Newington workhouse on the 18th ult. The jury assembled to inquire into the cause of death, pronounced a verdict of—"Died from apoplexy," in opposition to the evidence of the parish surgeon. These same worthies have since been figuring in the public prints, abusing the conduct of the surgeon as "ungentleman'like," in attempting to differ in opinion from them, and offering again to swear to the truth of their former judgment. It happened, rather unfortunately for the discretion of these gentlemen, that two physicians and four surgeons were present at the dissection, and that all declared there was no apoplexy. We have been assured by one of them that he examined every portion of the brain and spinal marrow with the most scrupulous accuracy, without detecting any trace of effused fluid, or other appearance which could warrant such a deduction. The following is the description of these parts taken from Dr. Green's pamphlet:—

The body of the idiot boy was examined on the 21st, at 12 o'clock p.m., by Dr. Green, in presence of Dr. O'Shaughnessy, Monsieur Dalmas, Messrs. Evans, Kingston, Lowne, and Vogan, surgeons.

"*External appearances.*—Face swollen and bloated; lips livid, body rigid; the upper extremities semiflexed, and extremely stiff; nails blue; no lividity of the other parts of the body.

"*Cavity of the Cranium.*—The proper vessels of the dura mater injected with dark blood; a great deal of fluid blood in the sinuses; the superficial vessels of the brain also much gorged, and the arteries at the base of the brain contain dark blood. The cerebral substance, when cut into, does not show any bloody spots; a small quantity of serum in the lateral ventricles, and the vessels of the choroid plexus, much distended with venous blood; the substance of the cerebrum and cerebellum firm and healthy; at the posterior part of the right lobe of the cerebellum, a small portion of the medullary substance near the surface was very hard: not yielding between the fingers when pressed, and resisting the knife when divided; the internal appearance of this hardened portion was healthy.

"*Vertebral Canal.*—The dura mater lining the vertebral canal in a normal state; a quantity of clear fluid in its cavity; thickening and opacity of the arachnoid at the commencement of the cauda equina; venous injection of the cellular tissue, between the bodies of the vertebræ and the posterior common ligament; so great near the cauda equina as to approach extravasation; the substance of the spinal marrow, throughout its whole extent healthy.

"*Cavity of the Thorax.*—Lungs perfectly healthy in colour and structure; the posterior vessels of the heart distended with dark blood; the right side of the heart flaccid, containing a quantity of black fluid blood; the left ventricle hard, contracted, its substance slightly thickened, containing a small quantity of fluid, exactly similar in colour and consistence to that in the right ventricle; no fibrinous concretions in the ventricles; all the valves healthy; the thoracic aorta contained some dark fluid blood; sympathetic nerve in the chest healthy.

"*Cavity of the Abdomen.*—External view of the intestines;—Stomach distended with gas; the colour of the greater part of the intestines pinkish; the extremity of the ileum, transverse arch of the colon and rectum, closely contracted; the peritoneal coat of the intestines covered with a viscid secretion discoverable only by the touch; the internal membrane of the stomach pale, and lined with a creamy matter; light red injection of the venous branches of the small intestines through their whole tract; the mucous membrane of the large intestines pale, and not injected; the intestines contain a gruel-like fluid, which shows an alkaline action upon test paper; liver healthy; the gall-bladder contains some green fluid bile, but no trace of bile in the stomach or intestines; the urinary bladder contracted, though not extremely so, pale and corrugated on its inner surface, which is lined with a yellowish matter; the kid-

neys gorged with venous blood; when the mamillary processes are compressed, a yellow matter issues forth; the same kind of matter is contained in the ureters; it appears similar to that which lines the bladder; the same kind of matter also found in the vas deferens; the abdominal aorta contained some dark fluid blood; nerves and ganglia healthy."

Any one at all conversant with the pathology of the cholera, will see that these appearances were precisely such as we would expect to find in the body of a cholera patient. The presence of the yellowish matter in the mamillary processes of the kidneys is a curious circumstance, which has not we believe been noticed by any one before Dr. Green. If it be similar to the yellow matter lining the ureters and the bladder, it shows that the kidneys separate this yellow matter instead of urine from the blood; and, probably, that the remnant of thick fluid in the ureters and bladder is not the product of their mucous membrane as had been supposed, but a secretion from the kidneys. The paralysis of the bladder, occurring during the first stage, and giving rise to an enormous collection of water in this viscus during the second stage, is another circumstance pointed out by the author as worthy of attention.

The pamphlet concludes with some remarks on the pathological cause of cholera, and on the theories advanced by Baron Dupuytren, M. Delpech, and Dr. Hope. Dr. Green conceives he is warranted by the preceding cases, by the results of his own experience, and that of many of the continental anatomists, to conclude, that the existence of dark blood in both sides of the heart and arteries, is the pathological cause of cholera, because it is the only appearance, of any importance, *constantly* observable. He states this as a simple fact, derived from anatomical investigation, without attempting to build up any theory of his own on the circumstance. The opinions of Dupuytren, Delpech, and Hope, are then examined. The author says, that the same objection holds against all, namely, that they are founded upon appearances which are not constantly observable, and would therefore lead to the absurdity of admitting a consequent without an antecedent. Dr. Green considers the theory of Baron Dupuytren conjectural, because the latter had not seen an example of the true disease. With respect to the opinion of Delpech, he says, that since the promulgation of the professor's ideas concerning the ganglionic nerve, he has examined carefully, *propriis manibus*, the bodies of five persons who have died of cholera. In four the semilunar ganglia was healthy; in one the left was somewhat injected. The inflammatory notion of Dr. Hope is perhaps treated somewhat too severely, but the author of this work has acquired a very good right to be critical on an occasion in which he evinces so intimate an acquaintance with his subject.

Our approval of Dr. Green's little work, however, must not be taken on inference only. It deserves and must obtain in the profession general circulation,—to aid it in which we now give the pamphlet our warmest recommendation. Of the thousand and ten brochures which the cholera has called into existence in Great Britain, it ranks among the ten, while the thousand are fast going down the stream of time, and falling into the pool of Lethe. In short, the man who boasts of his reading on the subject of the cholera, (as five out of every six of the numerous controversialists at present engaged in its discussion invariably do,) and at the same time has neglected to peruse the memoir of Dr. Green, must consider he has passed by very important means for regulating his own decisions on the disease, and influencing the opinions of others. Dr. Green is no child in anatomy, nor is his pamphlet a mere rattle for gaining public attention. On the contrary, we believe we may say, with confidence, that his statements are to be relied on as the result of as careful, accurate, and competent examinations as have hitherto been made in any quarter into the mysteries of this awful and malignant disease.

LONDON HOSPITAL.

SCIRRHUS OF THE MAMMA. EXTIRPATION —DEATH.

March 26, 1832.—Sarah Palmer, ætat. 47, married, mother of eight children, the youngest sixteen months old, was admitted into this hospital on the 22nd instant, under the care of Mr. Scott, labouring under scirrhus of the left mamma. She states that the disease first commenced about eight months since, but without her being able to assign any particular cause for its formation. On examination the nipple was found retracted and puckered, the diseased part hard and lobulated, with the upper portion presenting a dark livid appearance.

The operation of extirpation was this day performed in the following manner. The extent of the morbid affection being carefully distinguished, an incision was commenced on the brachial side, and carried downwards till the knife made a point directly opposite on the sternal side, describing in its course a segment of a circle. A similar incision was then made in the same direction on the superior side of the nipple, and carried onwards to the point where the first incision terminated. The gland was then dissected away from the subjacent muscles, great care being taken that no morbid or indurated part should remain. The time of the operation was prolonged in consequence of there being three indurated glands in the axilla, which were carefully removed. After the parts were removed, it was found necessary to tie upwards of ten vessels. The edges of the wound were then brought together by one suture, and retained by straps of adhesive plaster, and the whole was kept *in situ* by a compress and roller. After the operation she had *tinct. opii* ℳ. xx.

27. Has passed a tranquil night, pulse 78, soft; tongue clean, bowels not open. *Ol. ricini* ℨss *statim sumend. Mist. effervescens* omnis 6tis hor.

28. Pulse 84, fuller; tongue clean; bowels open three times; skin dry. Slept tolerably well last night. To continue the effervescing mixture. Eight p. m. complains of severe pain in the left side; thirst, with difficulty of breathing; countenance anxious; pulse 94, small; to have 30 leeches to the side.

29. Passed a restless night; pain in the side and difficulty of breathing very much increased; and at eight a. m. died.

FATAL CUT THROAT.

March 26. At seven this morning, a man was admitted who had made a most determined attempt to commit suicide by cutting his throat, the incision being just above the thyroid cartilage, separating the cornua from the os hyoides, cutting into the pharynx, and dividing a few of the fibres of the sterno-cleido-mastoidei muscles. The dresser succeeded in injecting some barley water into his stomach by passing the gum elastic tube of the stomach-pump through the wound down the œsophagus into the stomach; but on attempting this afternoon again to pass it, so much irritation was caused by the instrument that the experiment was immediately desisted from, and an enema of barley-water, with *tinct. opii*, ℳ xxx, was ordered instead.

27. Passed a very restless night. The whole of his time appears to be passed in prayer. Respiration difficult, with mucous rattle; intense thirst; is evidently sinking. The enema has been repeated three times. Eight p. m. is rapidly sinking; pulse 97, small; respiration extremely difficult; intense thirst; skin hot and dry.

28. Passed a very restless night. At half past six he died.

ABUSE IN THE LIBRARY REGULATIONS.

To the Editor of THE LANCET.

SIR,—Knowing you to be the ever strenuous supporter of our rights, and the expositor of our wrongs, I have to call your attention to a piece of illiberality practised on the lecturing pupils of the London Hospital by the two principal surgeons of that institution. The illiberality complained of is exhibited in the following regulation:—"That no pupil be allowed to subscribe to the library unless he enter to the hospital practice." About a year ago the law was put aside, but since the opening of the new room* it has again been brought into force, acting as a trap to induce pupils to enter sooner than their arrangements would have otherwise led them to do.

Publicity will no doubt effect the object I have in view, and therefore forbearing from further remarks,

I have the honour to be
Your obedient Servant,
A LECTURE PUPIL.

ST. BARTHOLOMEW'S HOSPITAL.

REMOVAL OF AN OSSEOUS GROWTH FROM THE UPPER JAW-BONE.

MARY ROSE, ætat. 50, admitted March 22nd, is a woman of strong constitution and

* They were in debt 30*l.* at that time.

enjoying excellent general health. On the left upper jaw there is a tumour springing from the alveolar process, on each side, to the extent of an inch and a-half forwards from the pterigoid process. This growth is of about six years' duration, and she ascribes its origin to the irritation caused by a decayed tooth. It flanks the molar teeth, which are partially embedded in, and overlapped by, its substance. The diseased mass has been the source of little pain since the first period of its growth, which has been very gradual. The inconvenience, however, caused by it in the functions of mastication and articulation, is extremely annoying to the patient, and she is quite prepared for undergoing an operation. As a preparatory step, Mr. Lawrence deemed it expedient that the embedded teeth should be extracted, since their fangs might interfere with the line of division. This was therefore accomplished on the 30th by Mr. Rogers, dentist to the hospital, who therein displayed much skill, making use of the *forceps*, the superiority of which over the key was in this instance peculiarly manifest. Saturday last was the day of operation, when, the patient being laid supine on the table, Mr. Lawrence commenced by making an incision on the affected side, from near the angle of the mouth across the cheek to the lower edge of the zygomao. The incision was curved, the convexity being upwards, avoiding the parotid duct. The arteries now began to spout forth most copiously, and some little time elapsed before they were secured; about a pint and a half of blood, we should think, being lost. Ligatures having been placed upon three, the operator proceeded with a scalpel to divide the soft attachments surrounding the bony growth, and then began to use the saw, apparently in an oblique line from the second bicuspid tooth towards the pterigoid process. After this the tumour was separated from the healthy bone with Liston's nippers, the division running just below the floor of the antrum. Some portion, or a spicula of bone, still remained, which however was quickly detached with an elevator. During these proceedings great inconvenience seemed to arise both to patient and operator, from the former being continually obliged to vomit forth coagula, which escaped into the passages during the hæmorrhage.

The edges of the incision were approximated and secured by a hair-lip suture at the angle of the mouth, and by three common sutures. Strips of plaster were placed in the intervals, and the patient was taken to Sitwell's ward; the operation, which was well performed, having lasted between thirty and forty minutes. The tumour was found to be of an osteo-sarcomatous description.

April 2nd. The patient since the operation has being going on very well. On Saturday she was somewhat troubled with the vomiting up of the blood; was ordered *pulv. opii*, gr. i. Yesterday, Sunday, she took two pills composed of—

Hyd. submur. gr. ij;
Ext. colocynth. comp. gr. viij.

Bowels opened by an enema. Pulse tranquil; no fever.

Thursday, 5th. Much the same. Says she feels comfortable. Wound looks well; it is healing nicely by the first intention. There is some heat about it, however, for which a piece of linen is applied wet with a cold lotion.

It is often very difficult for the great mass of the pupils to obtain, at these operations, a view either of the instruments used, or the mode of employing them, so great being the number of the INTRUDERS. Indeed it is here no uncommon circumstance to observe the surgeons and "recognised" assistants kept back during an operation, their places being usurped by persons at present entirely unconnected with the surgical practice of the hospital.

HOSPITAL TEXTS *v.* HOSPITAL PRACTICE.

Text.—"Morbid inspections, as opportunities occur; at *one* o'clock."—*St. Bartholomew Prospectus.*

Practice.—Case of fracture of the lower third of the femur, fracture of three ribs, and injury to the spine; admitted March 20th, death on the 28th. "Morbid inspection" at *twelve* o'clock; *no notice.*

Ibid.—Calculus in the bladder. Death on Monday, April 2; morbid inspection at half-past *eleven: no notice.*

CROWDING THE OPERATING TABLE.

To the Editor of THE LANCET.

SIR,—A regulation nearly to the following effect is hung over the table in the operating ward of St. Bartholomew's: "In order to prevent *interruption* at operations, the area round the table is preserved for the surgeons and the dressers of the operator *only*." This regulation is never adhered to, and indeed seems placed there as a mere mockery, for last Saturday it was so crowded that scarcely one half of the pupils could see what was going on, and after uselessly endeavouring for some time to remove the obstructions by crying out, "Heads," &c., a slip of paper was sent down requesting

that the above regulation might be attended to, when a Dr. Harris, *not* I believe a *surgical* pupil, upon having it put into his hands, immediately tore it up, and deliberately scattered the remnants in our faces, as if in utter defiance of our requests and our rights. The pupils are not the only parties inconvenienced. The surgeon is inconvenienced, and last, though not least, the poor patient. Should anything occur during an operation not exactly looked for or expected, or should the surgeon ask for any instrument or thing not in the hands of the house-surgeon, great *interruption* must of necessity occur, and much time must necessarily be lost before the operator can be supplied with what he required to carry on the operation, owing to the assembled M.D.s, and PUPILS who are closely huddled together peeping over one one another's shoulders, standing between the operator and the table upon which the instruments are placed, so that the house-surgeon has to force his way backwards and forwards through them.

I am, Sir, your obedient servant,
March 20th. ONE OF THE INCOMMODED.

*** The proceeding of the "Dr Harris" was most impudent and indecent, but probably his nose was at the moment beyond the reach of either of the gentlemen to whom the insult was offered, and the "Doctor" felt that he could tear the note with safety.

GRIEVANCES OF THE PUPILS.

To the Editor of THE LANCET.

SIR,—Some time ago I entered as perpetual pupil to the surgical and medical practice of St. Bartholomew's Hospital, thinking that by so doing I should be entitled to visit all the patients when either the surgeons or the physicians attended the hospital. Judge of my surprise then, when one day as I was with Mr. LAWRENCE in the out-patients'room, and he had finished seeing the *men*, and was about to commence prescribing for the *women*, he walked to the door, opened it, and observed, that as the ladies were about to make their appearance *he must request all gentlemen but the dressers to retire.*

Now, Mr. Editor, I should like to be informed why Mr. Lawrence acts so differently from the other medical men connected with the institution, and whether he has a right to compel the gentlemen to quit the room at his pleasure.

The other complaint I have to make, and which is one of much greater consequence to me, is the abolishment of the "casualty" patients who used to attend at the appropriate wards every morning from ten to one o'clock. I must confess that the atmosphere I had to breathe on those occasions was far from a pleasant one; but the information I obtained from them, (and which I was in the habit of doing daily,) amply repaid me for the temporary inconvenience. It is now, Sir, nearly three months since the doors were closed, at which time it was given out, that *in a few days a new and larger place would be ready for the reception of the indigent poor.* But, alas! day after day, week after week, and month after month are passing, and neither is a new casualty ward yet open; nor, as far as I can ascertain, is there any probability of there being one at present. Allow me to point out one of the consequences of this neglect. Why, the hospital square of a morning is thronged with poor people, who come under the expectation of receiving advice and medicines; some of them from a long distance, *all* of them *obliged* to return home with empty bottles, and suffering in all probability an aggravation of their diseases by the fatigue they have undergone. But this is not only inflicting a great cruelty on the poor, but it is an imposition on the whole body of pupils, more especially the dressers, whose duty it is to attend the patients in rotation, and for the promise of which they pay so dearly.

Pray, Sir, how are these evils to be remedied?

I am your obt. and humble servant,
ONE OF THE AGGRIEVED.

CORRESPONDENTS, &c.

Mr. H. The notice in our last was intended to have been accompanied by the letters in our present Number.

Sylvanus will find the best *practical* articles on the subject in Sir Astley Cooper's Lectures, and under the head of "Lumbar Abscess," in Mr. S. Cooper's Dictionary of Practical Surgery. With regard to the use of exercise and rest, the adoption of either must be governed by the stage of the disease.

We have not yet had time to peruse the work on the function of the spleen.

Maga is deceived. The papers have *not* been destroyed; they have only been unemployed.

An Hibernian. The charter is in full force; hence its acts retrospectively. Unfortunately, therefore, there is no remedy for Y. R., except in an alteration of the law itself. Had he a diploma from one of the continental universities, he might succeed in obtaining a license from that crumbling institution in Pall Mall East.

Juvenis. The Apothecaries Act was passed in the spring of 1815, and came into operation on the 1st of August in the same year. The Company of Apothecaries and the Junto in Lincoln's Inn Fields are two distinct assemblies, possessing also entirely distinct powers,—one under a charter, the other under the act just mentioned.

Argus. It does not merit notice. Should the reptile thrust its head out of its hiding-place, so as to prove really annoying, an event not very probable, why then we may put our toe upon it, and crush it. The thing has venom, but no teeth.